American Engineer

MAY, 1957

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Maryland Grads View Coming Careers

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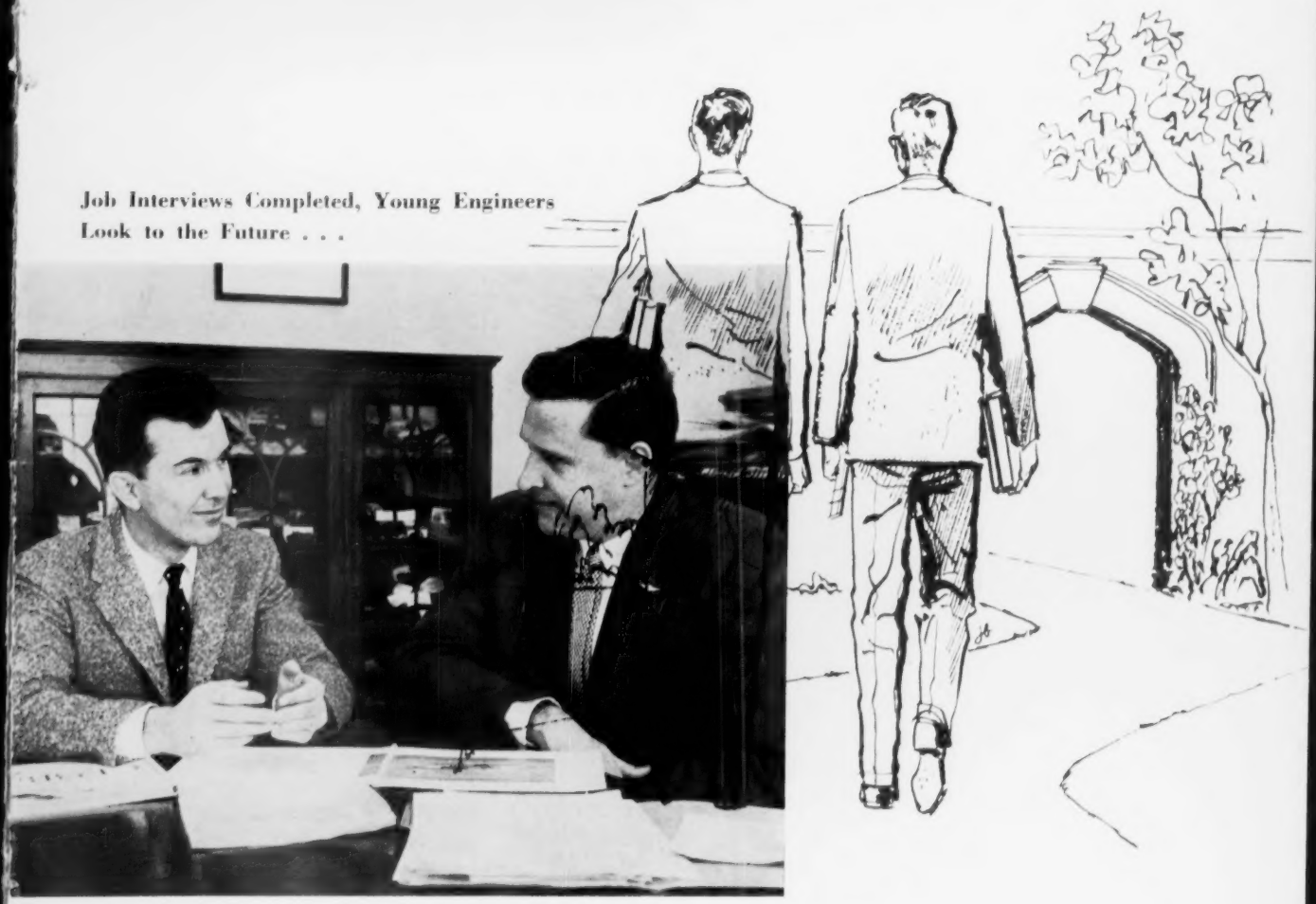

Job Interviews Completed, Young Engineers Look to the Future . . .

Plus: What We Are Doing in Brazil by Harold E. Babbitt, P.E.

Registration and the Screening Out of the Unethical by Dean C. J. Freund

Complete Annual Meeting Program • Latest Legal News

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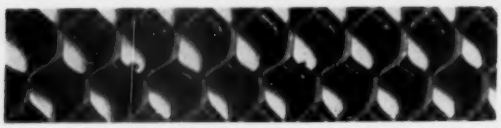

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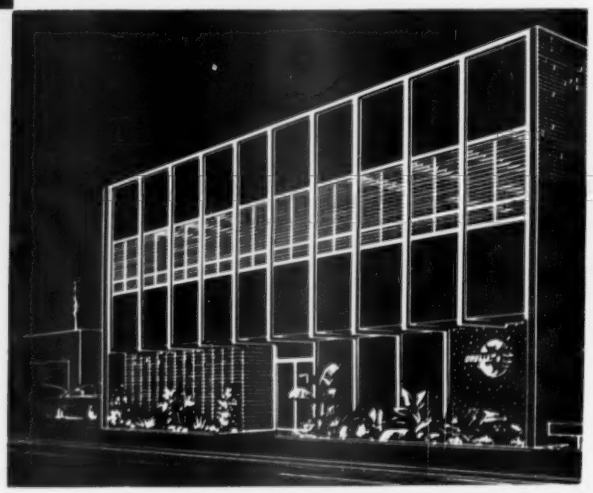

(Circle 1 on Inside Back Cover)

American Engineer

MAY
1957

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Letters to the Editor

Report Writing . . .

Dear Editor:

I very much enjoyed reading the excellent article by Richard A. Garver on writing (U. of Wisconsin Sponsors Institute on Report Writing—March, 1957, issue).

I agree entirely with all of his suggestions—except one. Current practice, I believe, is to put the conclusions of an engineering report at the beginning rather than the end of the report.

Many people that have occasion to see or read an engineering report are *only* concerned with the conclusion drawn by the writer as a result of his investigation or series of tests. This is particularly true of men in top-level management. They respect the engineer's ability in programing his study or test; they are merely interested in the results.

Actually, putting the conclusion first develops a good deal more interest in the report. You will note that Mr. Garver in writing his article puts his conclusion in the very first sentence of his article—writing a technical report can be made nearly painless. Because the conclusion is of great interest, the reader goes on to learn why and how.

Mr. Garver has rendered a valued service to professional engineers by pointing out ways in which our communication with management, and other engineers, can be improved. I, for one, would like to see great attention given to the subject by more members of our profession.

MICHAEL A. SPRONCK, P.E.,
Editor, *Construction Equipment*,
New York, N. Y.

Future Robots? . . .

Dear Editor:

This is an answer to Mr. Ralph M. Shaw's letter to the editor in the March issue on the subject of solving the engineering shortage by reducing educational standards for engineers.

Mr. Shaw's letter was an enlightening one but expressed a point of view which I, as a professional engineer, hope and pray will never be taken seriously. Mr. Shaw's answer to the present day shortage of scientists is to form our future scientists and engineers into animated univacs, by teaching only science to the scientist and engineering to the engineer.

May I point out that the proposed future robot will be in operation for about eight hours per day. Assuming eight hours of "garaging," what will this robot do with his leisure eight hours required to complete the twenty-four hour daily cycle?

Unfortunately, I have no exact answer for the present day shortage of engineers and scientists, although I believe that it is directly proportional to the depression and low birth rate of that period. Looking at the situation from an optimistic point of view, I think we will find that in the next ten years our crop will grow to reduce this present shortage. However, we must always bear in mind the danger of sacrificing quantity for quality.

It must be granted that the general conception of an engineer is as a self-centered man, living in a vacuum, with a slide rule in one hand and a 2H pencil in the other, and this we must admit is not far from the truth. In a self-analysis, how many people in our profession do we know who are inept in matters outside their professional sphere?

Therefore, in respect to quality, the classics, humanities and so called "bull courses" taught under our present day engineering curriculum, should actually be expanded rather than curtailed, so that we as engineers can gain recognition as professionals rather than human machines.

BERNARD HABER, P.E.,
Fresh Meadows, N. Y.

Costs and Salaries . . .

Dear Editor:

I read with interest (AE, Dec., 1956) of Dean Karl A. Hill's concern over the cost per man incurred in recruiting engineering graduates.

I think the real reason for the high cost per man is this: If XYZ Company interviews one hundred men and offers ten per cent less salary than that required to hire ninety-nine of them, the cost of hiring this one man is going to be unreasonable.

A starting salary of $400 per month is also mentioned. Is it not possible for the young graduate to sell insurance, paint houses, help out in his dad's business, or even drive a taxicab and earn more than $400 per month?

I am sure that it could be proved that there are still many graduates going into non-technical fields of endeavor because they can't afford financially to be engineers.

When industry is ready to adjust the remuneration, these men may be lured back into technical work, the shortage partially alleviated, and the recruiting cost per man reduced substantially.

SAM KELLOUGH, P.E.,
Minneapolis, Minn.

The Gifted . . .

Dear Editor:

Your article "Educating Our Talented Children" by Admiral Rickover (the AE, March, 1957) advocates the need for a broad basis of general knowledge upon which specialized training could be superimposed. This broad basis is needed by our talented youth who want to continue their studies beyond high school. Hence I agree fully with the Admiral: A separate high school should be provided for this group to be started after the fourth or fifth grade. This system is and has been in effect in many countries.

I was raised in Austria where I went to a public elementary school for four years. At the completion I had to pass an examination which consisted of writing a composition and mathematical problems to enter the "gymnasium," a classical high school which was prerequisite for college or university study later and provided the broad basis of general knowledge as so well pointed out by Admiral Rickover. The other part of the youth, who did not intend to go to college, continued their schooling for another four years in the public high school before they went into a trade. I want to point out that this broad basis of general knowledge was the main reason that I graduated cum laude from the School of Technology, CCNY, although there was considerable difficulty to overcome, especially in English, American history, and public speaking.

PAUL S. REIS, P.E.,
Frederick, Maryland

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(Circle 2 on Inside Back Cover)

On Education . . .

Dear Editor:

You are to be commended for procuring and publishing the article "Educating Our Talented Children" by Rear Admiral H. G. Rickover. I suggest that you make it possible for the membership to secure reprints for distribution to the proper officials.

Many of us realize the importance of this question to us as free citizens of a great nation whose progress depends on the decisions we must make as free men. Let us not succumb to the false arguments about equality in our educational system.

Equal rights before the law—yes. But any intelligent person knows we do not have equal mental capacities. The pedagogues seem to have succumbed to foolish popular pressure.

Thomas Jefferson recognized these differences when he early planned the public school system of Virginia. Why should we "kid" ourselves about these false notions of democracy.

The remedies proposed by the author recognize the fact that many talented children come from the less well-to-do homes, and that these children have less encouragement to prepare for college.

The author knows that in our desire to be truly democratic we have downgraded our high school curricula with unhappy results. Some differences of opinion, no doubt, may exist over his proposed remedies; but there should be no doubt about the urgency of the matter.

The author does not claim infallibility in diagnosing the cause, nor does he imply that his is the best remedy. Instead of trying to defend the groups involved, the patriotic thing to do is to cooperate in a joint solution.

It is natural to make mistakes. The wise thing is to correct them.

CARROLL D. BILLMYER, P.E.
Kingston, Rhode Island

Cordiner Report . . .

Dear Editor:

Your piece on the Cordiner Report (From Washington) in the March issue arouses my ire, too. If the report proposes, as you speculate, a "crackdown" on salaries of engineers working for government contractors, the practice would resemble closely certain practices long since outlawed even in labor circles. It should lead, at least, to a general refusal to work on government work and therefore to an inability to place government contracts. If we had an integrated profession, as Engineer Garvin H. Dyer proposed in the January issue, such a "boycott" could be made effective at once.

In this connection, note that doctors, who have such an integrated profession have been, alone among professionals, able to demand that government respect their professional status even to the extent of guaranteeing commissions to those caught in the draft. Furthermore, there is no proposal to "crackdown" on their incomes.

Perhaps an integrated profession, such as doctors and lawyers have, is after all a union as some have said. Regardless of name, however, it begins to look as if we need such a plan, coupled with licensing of men who actually do engineering as designers and other employees as well as licensing of principals.

JOHN G. KNEILING, P.E.
Staten Island, N. Y.

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There is a solution, however . . . and perhaps the Alexander Hamilton Institute can help you find it just as it has helped thousands of other ambitious men over a period of nearly fifty years.

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"Forging Ahead in Business" was written for ambitious men who seriously want to get down to bed-rock in their thinking about their business future; there's no charge for the booklet because, frankly, we've never been able to set a price on it that would reflect its true value. Some men have found a fortune in its pages. If you feel that it's meant for you, simply fill out and return this coupon. Your complimentary copy will be mailed to you promptly.

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PROFESSIONAL NEWS IN CAPSULE FORM

A Roundup of Late Events for Professional Engineers

W. L. Schachte Selected For Top Shipyard Post

A member of the National Society, William L. Schachte, has recently been selected to fill the position of supervisory naval architect, the head engineer of the Design Division, Planning Department, of the Charleston, S. C., Naval Shipyard.

According to Captain H. J. Pfingstag, commander of the shipyard, the position is the highest classified civilian post in the shipyard. Mr. Schachte is currently president of the Charleston Chapter of the South Carolina SPE. He was national president of the Naval Civilian Administrators Association in 1955.

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(Circle 4 on Inside Back Cover)

Expect More Than 2000 At ASEE Annual Meeting

More than 2,000 members and their families are expected for the sixty-fifth annual meeting of the American Society for Engineering Education from June 17 to 21 at Cornell University, Ithaca, New York.

On their agenda will be most of the urgent problems facing engineering schools today—improving high school science preparation, increasing the supply of engineering teachers for the rapidly-growing enrollments, the problems of research manpower in engineering colleges, and more efficient use of colleges' limited facilities and staff.

R. R. Tucker Re-elected Mayor of St. Louis, Mo.

Raymond R. Tucker, mayor of St. Louis, Mo., and an NSPE member, recently won re-election by a better than 3-to-1 count.

Unofficial totals gave him 102,179 votes to 30,913 for his opponent. Mr. Tucker was virtually drafted four years ago by civic leaders to head a municipal overhaul campaign.

"Henderson, will you step into my office, please?"

NSF Announces Various Science Awards for '57-'58

The National Science Foundation has announced the award of 845 predoctoral graduate fellowships in the natural sciences and allied fields for the academic year 1957-1958. Successful Fellows were selected from 3,028 applicants from all parts of the continental United States, Alaska, Hawaii, and Puerto Rico. Honorable mention was accorded 1,391 applicants.

In addition to the predoctoral fellowships awarded, the Foundation also announced the names of eighty-four winners of regular postdoctoral fellowships. These awards were made in furtherance of the Foundation's policy of encouraging gifted college graduates to obtain advanced training in the sciences on a full-time basis.

The NSF has also announced the awarding of 100 science faculty fellowships in the sciences for the academic year 1957-1958. Awarded this year for the first time, these fellowships are offered as a means of improving the teaching of science, mathematics, and engineering in American colleges and universities. Primary purpose of the awards is to provide an opportunity for college and university teachers to enhance their effectiveness as teachers.

All awards were approved by the National Science Board upon the recommendation of Dr. Alan T. Waterman, director of the Foundation.

Captain Ira T. Sanders Retires After 32 Years

Captain Ira T. Sanders, assistant to the director of the Coast and Geodetic Survey, U. S. Department of Commerce, retired in March after more than thirty-two years of service.

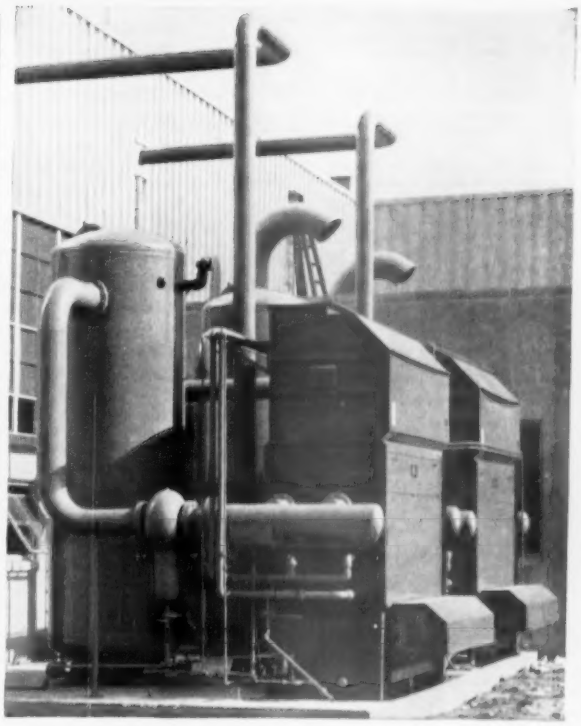
Upon retirement, Captain Sanders was advanced to the rank of rear admiral because of special commendations by the Secretary of the Navy for the performance of meritorious service in combat during World War II. He is an NSPE member.

Engineers "Aristocracy of Necessity" AIEE President Declares at Iowa Meet

Engineers "have become the aristocracy of necessity," M. S. Coover, president of the American Institute of Electrical Engineers, said in a recent speech.

"Never before in all history has society become more conscious of its dependence upon scientists and engineers," Mr. Coover, an NSPE member, declared in an address at the opening session of the Great Lakes district meeting of the AIEE in Des Moines, Iowa. "Industry depends upon them for a steady stream of new and diversified products so that business may continue to be both the main spring and the balance wheel of our economy. Society depends upon them for national survival through their ingenuity to develop, produce, and deliver instruments of destruction if need be. Engineers thus have become a commodity in short supply in some areas. Perhaps it can be stated quite fairly that they have become the aristocracy of necessity."

Mr. Coover, who is administrative assistant, Division of Engineering, Iowa State College, warned, however, that engineers should not allow themselves "to be disillusioned by this sudden dependency," upon them but should continue to develop after college.



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(Circle 5 on Inside Back Cover)

Major Aircraft Manufacturers Support Aeronautical Engineering at Stanford

Five major aircraft manufacturers have joined in support of the new Division of Aeronautical Engineering in Stanford University's School of Engineering, it has been announced.

Gifts and pledges totaling $105,000 have been received from Convair, Douglas Aircraft, Hughes Aircraft, Lockheed, and North American Aviation.

The fund will help to pay salaries, purchase up-to-date equipment, and facilities, and furnish fellowships to attract graduate students to the division, which will come into operation with the start of the academic year 1957-58.

ASME Design Engineering Conference To Feature Show With Many Exhibits

Engineers and others concerned with the design of new products of all kinds will gather in New York May 20-22 for the 1957 Design Engineering Conference, sponsored by the American Society of Mechanical Engineers.

Three days of technical sessions will be supplemented by the Design Engineering Show, a display, at the Coliseum, of hundreds of exhibits showing the newest techniques and materials in such fields as power transmission equipment, metals and non-metallic materials, plastics, finishes, fasteners, shapes and forms, and components of electronic, mechanical, electrical hydraulic and pneumatic equipment. It is expected to be the largest show of its kind ever held.

A banquet on May 22 will feature a speech by William F. Ryan, president of The American Society of Mechanical Engineers speaking on "The Design of a Profession." Dr. Ryan is vice president and senior consulting engineer of the Stone and Webster Engineering Corp., Boston.

At the Design Engineering Show, manufacturers are expected to display not only new products now ready for marketing, but experimental materials and devices which may be available in the future.

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(Circle 7 on Inside Back Cover)

M.I.T. Announces Summer Session for Professionals

Thirty-three special professional programs, ranging from missile aerodynamics to the psychology of man-machine systems, will be offered for professional men and women during the 1957 summer session at the Massachusetts Institute of Technology, it has been announced by Dr. James M. Austin, summer session director.

"More than 2,000 scientists, engineers, executives, and other professional people are expected to attend the series of short intensive programs," said Dr. Austin.

Most of the 1957 summer programs will extend for two weeks although some are for one week periods. Most of them meet only on weekdays, leaving weekends free for touring and sight-seeing.

Extensive work in various laboratories including the use of advanced facilities at the Institute will be a feature of most of the programs. Members of the M.I.T. Faculty will supervise all of the programs and visiting lecturers from other schools and from industry will also participate in many.

"This series," according to Dr. Austin, "is especially designed for professional people not regularly associated with M.I.T. We seek to help these people refresh and enlarge their knowledge and extend their mastery in professional fields in which the Institute is pre-eminent."

Eastman Kodak Awards Thirty-Three Fellowships

Thirty-three fellowships for advanced study in chemistry, physics, and chemical engineering have been awarded for the academic year 1957-1958 by the Eastman Kodak Company, it has been announced.

Thirty-one of the fellowships will go to colleges and universities in the United States. The educational institution, in turn, will select the fellowship recipient. Two fellowships at Canadian universities will be sponsored by Canadian Kodak Co., Limited, a Kodak affiliate.

Twenty-one fellowships will be for study in the field of chemistry, six in chemical engineering, and six in physics.

Value of the Kodak fellowship program for the coming academic year is more than $120,000. The program was begun by Kodak in 1939. Its purpose is to encourage research training of promising young scientists and engineers studying for the Ph.D. degree.

The fellowship program is part of Kodak's over-all aid-to-education plan, which this year will amount to about $700,000 and will benefit more than 100 educational institutions and organizations.

Each fellowship recipient in the United States will be granted at least $1,600 while married persons with dependent children will receive $2,400. The grant provides tuition and fees and an additional $1,000 to help defray the student's research expenses while studying under the fellowship program.

ASME Meeting Scheduled June 9-14 in California

Jet-age aircraft, atomic power, safer industrial machines, new gas turbine engines, air pollution control and improved mechanization and efficiency in a half-dozen industries will be among the topics covered June 9-14 in San Francisco, Calif., at one of the largest meetings of its kind ever held on the West Coast, according to an announcement by the American Society of Mechanical Engineers.

Thousands of engineers, business executives and others are expected to attend the more than sixty technical sessions and panel discussions included on the ASME semi-annual meeting program, at the Sheraton Palace Hotel. More than 130 papers written by experts in fields ranging from aviation to wood industries will be presented and discussed.

Vincent DiMase Receives New Providence Position

Vincent DiMase, civil engineer, has been appointed director of the Department of Building Inspection, Providence, R. I., by Mayor Walter H. Reynolds. He will administer the new Providence Building Code, which went into effect April 1.

Mr. DiMase is a past president of the Rhode Island SPE and a past NSPE national director. He is Rhode Island editor of the *New England Professional Engineer* magazine.

Electronic Computers To Relieve Situation?

Proper use of electronic computers may be a solution to the nation's current need for scientists and engineers, a leading aeronautical engineer recently said. The saving in brain-power, he pointed out, could produce a "new look" engineer whose creative output would be more than that of thirty present-day engineers.

Daniel O. Dommasch, president of Dodco, Inc., research and engineering consultants, gave this estimate to some 400 aeronautical engineers and mathematicians attending a symposium on "Computing in the Aircraft Industry" at the New York University College of Engineering. NYU and the International Business Machines Corporation co-sponsored the two-day conference.

Computers—or "mechanical brains"—would free engineers from time-consuming routine calculation and allow them "to utilize their latent creative talents on a full-time basis," Mr. Dommasch said.

They would also free engineers and scientists from making "the physical and mathematical approximations that are now considered necessary" and would replace "today's 'educated guesses' with accurate numerical solutions."

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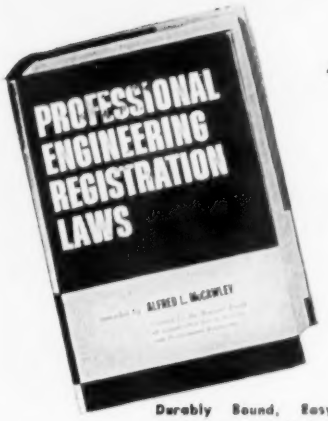
Research Corporation distributed $1,243,275 in 377 grants to aid basic research in science during 1956, Joseph W. Barker, chairman of the board, announced in the non-profit foundation's annual report released in April. The grants went to 114 colleges and universities in the United States, Canada, Hawaii, Cuba, West Germany, and other countries.



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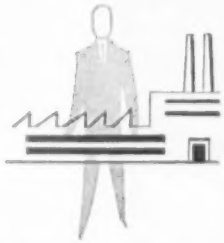

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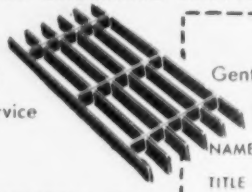

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American Engineer

The Magazine of the Registered Professional Engineer

VOLUME TWENTY-SEVEN NUMBER FIVE

Prof. Russell B. Allen, assistant dean of engineering at the University of Maryland and currently serving a tenth term as treasurer of the National Society, is shown talking with William S. Haney, Jr., president of the Tau Beta Pi Fraternity at the university. See comments by Haney on page 13.

• An American Engineer Photo Story •

Maryland Grads View Coming Careers

By

Paul Reece

Staff Writer

THE 1957 college engineering graduate has been candidly described as a "woman in a bargain basement"—so much to choose from that he doesn't know where to turn!

With all this talk of recruiting, employment opportunities, and high salaries, the AMERICAN ENGINEER recently visited the University of Maryland campus and questioned some typical engineering seniors in an effort to gain their impressions of the bustling job boom as well as their over-all views prior to entering the profession.

The results were most revealing.

First, it was discovered that the June engineering graduate *really does* have a problem. Practically every day during his senior year, there is an industry representative on the campus eager to make a pitch. The starting pay offered is excellent—it averages about $5,600 a year. Some aircraft industries will even go a few thousand higher. How is the student to decide upon his future place of employment? And how would *you* like to be in his position today?

Demands by industry for engineers are overwhelming despite the fact that more students are preparing for engineering careers this year than at any other time since 1948.

Figures compiled by the United States Office of Education and the American Society for Engineering Education

A Day in June

Thomas W. Finch
Takoma Park, Md.

George F. Corbin
Bethesda, Md.

John E. Waldo
Silver Spring, Md.

Stuart C. Anderson
Deep River, Minn.

show a total of 243,000 studying in accredited engineering colleges last fall. This total is almost equal to the all-time high of 1947 when the colleges were jammed with World War II veterans. And today's trend is still upward. Although the number of graduating engineers is expected to be slightly more than 30,000 this year, industry says its needs are far greater.

The University of Maryland offers a typical example of industry's search. Of approximately 400 visits by industry to the campus during the school year 1956-57, more than half were looking strictly for engineers.

DATES for interviews to visit the university are usually arranged a year in advance through Lewis M. Knebel, placement director. In a form letter to companies, he urges that because of the highly competitive recruiting for engineers and physical scientists dates should be made at least eight months in advance. Students are informed of the industry visits by a list published each semester plus a bi-monthly bulletin for late reservations. Interviews are then generally set up on a twenty or thirty-minute basis.

Knebel feels that despite all this recruiting, the student is not spoiled but is rather getting a good opportunity and is well aware of it. He believes, however, there is too much of a tendency by the student to select an established company rather than take a chance with a newer firm.

Campus recruiting is more than just a placement function, Knebel points out. It is also a public relations function. The university official claims that this recruiting business, and *it is* a business, has mutual benefits. If the placement office does a top job then industry is more liable to remember the university whenever scholarships or grants are being passed around. Then there is a curriculum exchange. The university is able to find out what industry wants and in turn relays it to the faculty, which all makes for better engineering preparation.

The University of Maryland seniors were queried on a variety of topics. What job factors did you consider most important? What was your impression of the recruiters? Why do you consider registration desirable? What are your views in regard to joining a professional engineering society? What was your most valuable non-technical course?

Most of the senior engineering students at the university have already selected their place of employment. They answered questions readily. After a year of this recruitment pressure and constant wooing by industry, they, not-surprisingly, felt quite qualified to express their opinions.

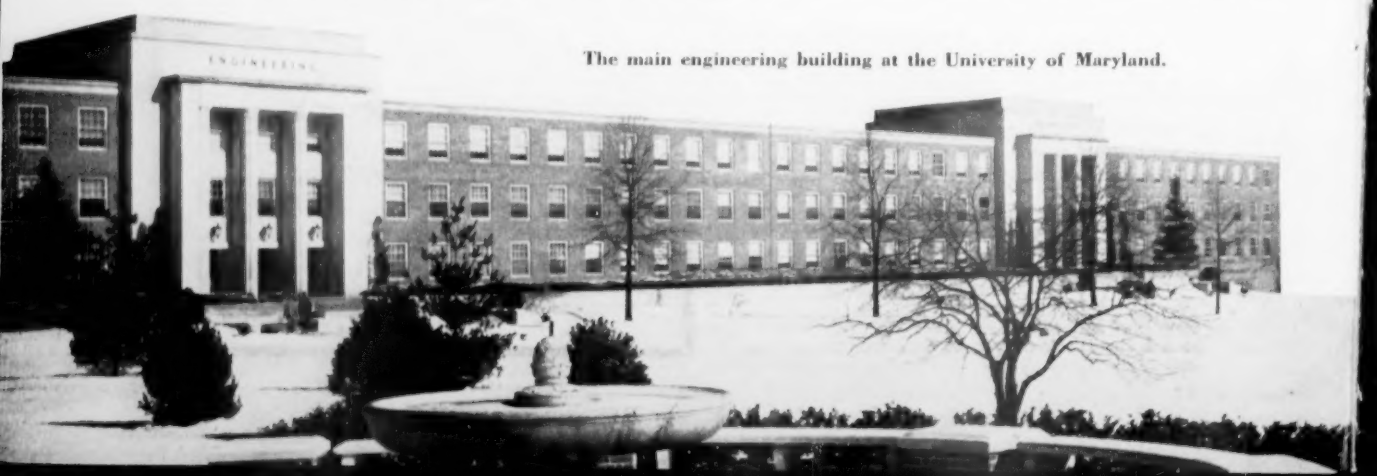
Stuart C. Anderson, of Deer River, Minn., had this to say: "I've decided to go to work for the Tennessee Valley Authority in Knoxville because the type of work appealed to me, and happiness on the job is of paramount importance. Though the salary is much lower ($430 a month) than many of my other offers, an investigation of the different costs of living in different areas showed it balanced . . . with so many good offers, it really was a tough decision to make—the only true test is trial."

A civil engineer, Anderson had ten interviews and received nine job offers with the tenth waiting a bit too long before replying.

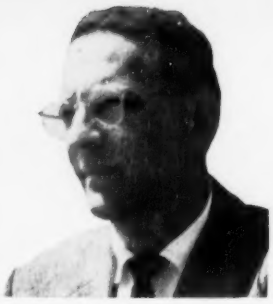
Because of the time limits of the interviews, many appeared as rather rapid "commercials" on all the benefits of the company, he said.

Anderson suggested that companies could improve their recruiting methods by providing more concrete information on the type of work the individual is likely to be doing. "Many recruiters seemed to know very little about

—All photos used in this article were taken by Alfred Danegger, assistant professor of press photography at the University of Maryland



The main engineering building at the University of Maryland.



Buford K. Kennedy
Frederick, Md.

James E. Phenix
Silver Spring, Md.

William Brzozowski
Baltimore, Md.

Philip H. Parsons
Washington, D. C.

details," he claimed, "only general features about products, general opportunities, fringe benefits, and so forth. Better interviewing by the interviewer would help," he added. "After an interview many times it occurred to me that I had heard all about the opportunities Company A had to offer, but Company A knew and cared little about me. Because of this I would probably be just another number on the payroll."

ASKED if he had received enough of an indoctrination in professionalism, he replied that he had, adding, "Prof. Allen has been very good at stressing this point and giving a good indoctrination into it." Prof. Russell B. Allen is assistant dean of engineering at the University of Maryland and cooperated considerably with the AMERICAN ENGINEER in preparing this article.

"For the most part, the interviewers were all very pleasant, well dressed, but not very informative," said **James E. Phenix,** of Silver Spring, Md. "I was given the impression that they were buying me rather than selling their company."

Phenix is a mechanical engineer who plans to work for the Allegheny Ludlum Steel Corporation, of Waterviet, N. Y., after graduation. Like most of his classmates, he visited the company's plant before accepting their offer of $450 a month. "I would never accept a position without first visiting the plant and meeting the people with whom I would associate," he said.

Until this year many students were invited to the plant, according to Placement Director Knebel, but companies have been cutting down on such visits as being too expensive. They still predominate recruitment, nonetheless.

"What are your views in regard to joining a professional engineering society?" Phenix was asked.

The answer was quick and to the point—"If by society you mean union the answer is very definitely no, but if you mean an organization that will aid me in my professional development then I will certainly join."

Phenix said he believed professionalism should be emphasized in school periodically throughout the junior and senior years.

The president of the Tau Beta Pi fraternity at the University of Maryland, **William S. Haney, Jr.,** of Baltimore, Md., is currently undecided as to his future employer. He has had seven interviews — and received seven job offers. All his interviews were on the university campus, which brings out a complaint sometimes heard by educators and placement people. They feel the student should look more on his own than depend entirely upon on-campus recruitment.

Haney listed some forthright suggestions to companies on how to improve their recruiting methods —(1) Send engineers, not personnel men — or perhaps both; (This has proved to be rather a popular trend nowadays as students have a host of questions, technical and otherwise, to ask the interviewer.) (2) Provide an adequate description of the location; (3) Specify more clearly the work that the new employee will do; (4) Provide written lists of fringe benefits, educational opportunities; and (5) Provide cost of living statistics for the plant location.

"It is quite difficult to remember which company offers what," he exclaimed in adding to his fourth point.

His opinion of recruiters was that they were "quite variable." Haney preferred talking to engineers rather than personnel men. "Some of the interviewers were well informed, truthful, and interesting; others seemed disinterested, a few resorted to very obvious flattery."

AN aeronautical engineer, Haney said that he hadn't been convinced that registration was necessary in the aircraft industry, but felt that membership in a professional society was very important. All but the two "aeros" interviewed deemed registration desirable. He said he believed that the advantages of active membership in the professional engineering societies should perhaps be emphasized more by educators.

John J. Zamostny, of College Park, Md., home of the University of Maryland, will remain with Criss Brothers & Company, of Bladensburg, Md., soon after he picks up his diploma. A civil engineer, he will receive $6,500 a year, having had previous working experience with this firm.

"Of the three interviewers I talked to," Zamostny said,

"I'll accept your offer if you'll throw in an extra coffee break and your secretary's phone number."

John J. Zamostny
College Park, Md.

James D. Bailey
Los Angeles, Calif.

"only the one from T.V.A., was able to answer the questions asked. One interviewer could tell me only the starting salary and that I would go into a training program."

He also remarked that he hadn't obtained enough indoctrination in such matters as professionalism and ethics and felt that such a course should be given and all engineering students required to attend.

An electrical engineer who formerly lived in New Portland, Me., but who now resides in Washington, D. C., **Philip H. Parsons,** suggests that companies lengthen the interview period. For a man really interested in a company, it doesn't provide him with enough information for a decision, he said.

Parsons is debating his employment choice at present, and considers future opportunity over any single other job factor. These factors varied from student to student. When asked if he thought he had acquired enough training in the "humanities" at the university, he replied that "Contrary to the average opinion in my class, I appreciated all of the courses outside engineering. I enjoyed them possibly most of all."

A total of fourteen job offers were presented to **John E. Waldo,** of Silver Spring, Md. A mechanical engineer, he has accepted a position with the Maryland Electronic Manufacturing Co., of College Park, Md., at $7,500 annually. Waldo's impressions of recruiters also varied widely. "But set apart from all others and definitely the poorest interview I experienced was with a personnel manager," he said, "who desired to know what shop machines I could operate and to which labor unions I belonged, without expressing any interest in college activities or performance, or even asking the branch of engineering I had pursued."

"I consider registration desirable," Waldo stated, "as a means of defining and restricting the lines which determine a profession and for lending some protection to the individual professional subjected to pressure from collective bargaining groups." He said that he intends to join a professional engineering society—as did most of those interviewed.

Do you think you received enough training in the "humanities" at the university?

"Yes. I entered school to learn the rudiments of science, art, and mathematics of engineering in the shortest possible time, and with limited funds," Waldo answered. He is a service veteran like many of his classmates.

"I have found that four years crowded, have opposed any activity not contributing to the knowledge sought, and would strongly object to completing a fifth year for the sake of 'humanities,'" he continued. "With all due respect to Dr. Killian, I feel the need exists for engineers in quantity, and that our institutions are producing graduates of a level well-fitted to our largest number of requirements. A force-fed 'humanities' program would discourage many otherwise useful engineers and would leave little with the passive majority that labored through such a program. The desired quality, toward which these new curricula are aimed, may well be better found in those appreciative and interested individuals who will seek this knowledge as a natural course after graduation."

Thomas W. Finch, of Takoma Park, Md., has been employed in the Missiles Division of Douglas Aircraft Company, Santa Monica, Calif. He was employed by Douglas during the summer of 1956, and will return to work for them full-time despite the fact that he took nine interviews and got nine job offers. The plan whereby students work for firms in their junior year has paid off for many companies as often times the youth returns after graduation.

"The attitude of the recruiters from several companies was ridiculous," Finch said, "in that they claimed to be interested only in the very top men and then made offers up to twenty-five per cent lower than the average." He is an aeronautical engineer.

A navy veteran of eight years, **Buford K. Kennedy,** of Frederick, Md., felt that a job offer could be made at the university when the firm is a considerable distance from the school rather than make the individual travel to the company's plant during the school term. Undecided upon his place of employment, Kennedy, a mechanical engineer, took a favorable view of recruiting in general.

"I'm a 100 per cent for the professional society . . . and 100 per cent against any society resembling a union." spoke **George F. Corbin,** of Bethesda, Md. He will soon start work for Emerson Research Laboratories, of Washington, D. C., where he has had previous summer employment experience.

James D. Bailey, of Los Angeles, Calif., felt that such subjects as English, speech, and engineering law would be most helpful to him in his job other than engineering courses. With eight job offers, he still remains undecided. Several seniors involved in this article expected to shortly select their place of employment, but were still in the

(*Continued on page 18*)

Prof. Carl W. Gohr is shown with a surveying group in an outdoor class at the University of Maryland.

Southern Diary . . .

WHAT WE ARE DOING IN BRAZIL

By

HAROLD E. BABBITT, P.E.

Sanitary Engineering Educational Consultant to the Ministry of Health, Brazil and Life Member, NSPE

There are many modern buildings in big and growing Brazil. This street scene is in Copacabana, near the famous and beautiful beach, in Rio de Janeiro.

THE title of this article is deliberately misleading. The "we" refers only to the author and his wife and not to the United States, its government, its people, its Operations Mission, nor to the numerous Point Four technicians scattered from Amapa to Rio Grande do Sul. The question is sometimes put to us by our friends, and we sometimes pause long enough to ask ourselves the same question, "what are we doing here?" In our particular case the answer can be made clearly and definitely.

In July, 1954, a meeting of instructors of sanitary engineering subjects, and others interested, was called jointly by a Bureau of the Brazilian Ministry of Education and Health and by the *Serviço Especial de Saúde Pública*, known locally as SESP.* Among the principal problems discussed at this meeting was the status of the education of sanitary engineers and what to do about it. Among the resolutions adopted was one recommending that a North American professor of sanitary engineering be brought to Brazil to advise and participate in sanitary

Shown is the College of Engineering, University of Rio Grande do Sul, at Porto Alegre, Brazil. The author says that the number of engineering institutions has increased greatly in the past few years.

* SESP is a part of the Ministry of Health and is the joint intergovernmental agency through which the Government of Brazil and the U.S. Government's Institute of Inter-American Affairs carry out their cooperative health programs in Brazil. Assignment of Consultant to SESP was made by the U.S.A. Operations Mission to Brazil, the office through which United States technical cooperation program is conducted.

engineering education. The objective of his mission is simple to state, simple to comprehend, but somewhat puzzling to attain.

"Brazil is larger than the United States, with another Texas left over" is a cliché heard at the opening of some lectures aimed at impressing the listener with the tremendous size of this great country. It offers an opening to the "wisecracker" who might wish to congratulate Brazil on the phrase "with another Texas left over." Another frequently heard statement is "There are more people who speak Portuguese in South America than any other language." The statement is based on the fact that the population of Brazil is about half that of the entire continent of South America and, in other South American countries, indigenous dialects are in use. Geographical size and language customs greatly affect the work of an "educational consultant" in sanitary engineering.

The University of Pará, at Belém, is the most northerly educational institution offering instruction in sanitary engineering subjects. This is located near the mouth of the Amazon River, about two degrees south of the equator. The climate here is tropical and enjoys two seasons annually, the wet season and the wetter season. The latter, called "winter," occurs during our winter months. At this time minimum temperatures may be within a few degrees of 70° F. The former, called "summer," occupies the remainder of the year and experiences little change in temperature. The most southerly institution where sanitary engineering subjects are taught is located in Porto Alegre in the state of Rio Grande do Sul, some 2,500 miles south of Belém and 30° south of the equator. It enjoys a four-season climate. The best that can be said of winter there, which seems to last too long from May or June to September or October, is that it is endurable. Minimum temperatures run a few degrees below freezing (that's when the coffee freezes) to long periods with maxima in the low 50's.

Between the extremes of Belém and Porto Alegre there were, in 1955, eleven colleges of engineering at which civil engineering had been taught for more than five years, and seven colleges where it had been taught for less than that time. The significance of the five-year period is that of the undergraduate engineering curriculum corresponding to our standard curricula in the States. The number of new institutions recently entering the field is significant. It indicates the rapidity with which engineering education is progressing, and it forecasts the growth of the engineering profession in Brazil. Most, if not all, of these educational institutions receive financial support from the Federal Government, and most are entirely supported by Federal funds. All professional engineering education is free. There are no individual nor group scholarships, and there is no tuition. The situation sounds somewhat Utopian, especially when it is understood that sanitary engineering textbooks in Portuguese cost almost nothing. That's because, with one exception, they do not exist. The one exception is a translation of a well-known American text.

EDUCATIONAL costs in Brazil are inverted. Primary and secondary education are costly to the participant. Higher education is free. The situation may be a factor in the high illiteracy rate in Brazil. The crop of candidates for an engineering education is higher than the existing institutions can assimilate, but it is low in proportion to the population and to the engineering needs of the country. Admission to an engineering college, and annual advancement, are by written examination. Only a limited number of those passing the entrance examinations with the highest grades is admitted.

A view of Sao Paulo from the Trianon. The professional engineer in Brazil is on a high professional, educational, and social plane. Much more so than in the United States, says the author.

The civil engineering student spends five calendar years in an engineering college and finishes at an age between twenty-three and twenty-four years. This is about the same age-range as in the States. However, contrary to the situation in the States, the young graduate is legally ready to practice engineering on his own responsibility. No period of apprenticeship or E.I.T. is required, and no further professional examinations are offered or required. Civil engineering is emphasized because the great majority of engineering students take this curriculum. They constitute more than double the numbers in all other branches of engineering combined. As the industrialization of the country increases so will the crop of mechanicals and electricals increase.

No formal graduate work is offered at any engineering college. However, an excellent advanced course in sanitary engineering has been given for a number of years at the Institute of Hygiene in São Paulo, and a new course was started at the University of Minas Gerais in Belo Horizonte in 1955. These courses are devised for graduate engineers. The number of students in the two

courses is pitifully small when compared with the needs of a population of more than sixty million. Most of the students in the two courses are governmental employees on leave of absence or on an in-service basis.

From the viewpoint of the individual student a too narrow specialization may not be desirable because the employment situation is unprepared for it, and tradition does not support it. An "engineer" is on a high professional, educational, and social plane. Much more so than in the United States. He is an *educated* person and, as such, may carry the title of doctor or professor, depending on his personality, his job, or the whiteness of his collar. The stage of development or the social-stage of the profession may be compared with its status when there were only civil engineers and military engineers. The former are expected to do anything in the field of engineering from designing and erecting a tall building to equipping a hydroelectric plant. Highly commendable examples of such engineering versatility are to be seen across the country. The situation adds to the challenge of a sanitary engineering education but the condition of many municipal water works and sewerage works offers examples at which it is possible to "point with alarm."

Shown here is the College of Engineering, University of Minas Gerais, Belo Horizonte, Brazil.

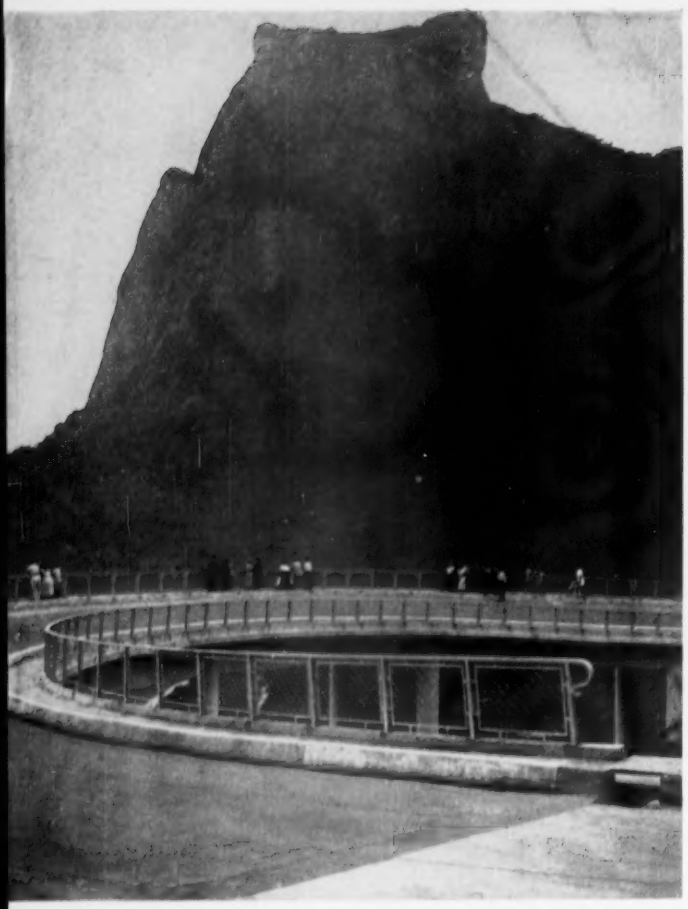
THERE are two forms of professional engineering organizations in Brazil, somewhat analogous to the situation at home. The "Syndicate" is a national organization with local chapters. Any engineering college graduate is eligible to admission. Among the objectives of this organization are the solution of professional problems and the status of the profession. Violations of legal restrictions against the practice of the profession are guarded against by this group. It does not, however, confine its interests solely to professional matters as addresses on technical and civic affairs are equally well received. The other engineering organization, which leans toward social rather than technical matters, is composed, apparently, of a group of autonomous local organizations. Admission to these local groups is dependent on a favorable vote of the members and not on professional qualifications. Membership involves no legal right to practice. The buildings occupied by some of these engineering societies would be the envy of our profession in many of our cities of comparable population. Other professional organizations, such as architectural and scientific societies, exist in the larger state capitals. Professional engineers of all branches support only one social and only one professional society. The profession presents a united front to the public.

The engineering profession enjoys a high standing in the public esteem. This may be due, in part, to collective and individual interest, activity, and influence displayed in public affairs. The mayor of the city is often a professional engineer. This is now true of the larger cities. For example the mayor of Belo Horizonte is a professional engineer. This is now true in many of the larger cities. For example the mayor of Belo Horizonte is a professional engineer. He devotes much of his attention and policy to the improvement of the public water supply and displays a professional acumen swayed apparently less by political than by economic considerations.

Interest in public affairs commences early in the education of an engineer. The college student influences public opinion, sways legislators and executives, and interferes in the administration of his school far beyond any similar influence wielded by students in our schools. The Brazilian engineering student sharpens his teeth on public affairs while yet a student, and his appetite for participation continues beyond his college days. Panty raids, gold fish swallowing, and similar signs of immaturity are unknown. Public attention, protests, and coercion are made effective by devices extending from the simple petition through mass meetings, posters, and parades to the strike. The last are seldom spontaneous but are led by a permanent student organization. Effective strikes and demonstrations have occurred over such unrelated subjects as street car fares, medical laboratory equipment, and student discipline. When a student demonstration gets out of hand it suffers, as our student demonstrations do at home, from undesired and undesirable participation by hoodlum elements and the mob spirit. It is then that the police step in.

Intercollegiate athletics do not exist, with the exception possibly of an annual sports festival held between the Naval Academy in Rio and Mackenzie University in São Paulo. A couple of years ago the Navy is said to have cleaned up on the annual series by a display of strategy

As Brazil progresses so does engineering. Here is a picture taken during the construction of the new Municipal Sports Stadium in Rio de Janeiro.



This modern highway leads to the top of a high scenic point in Vista Chinese Park. From here all of beautiful Rio de Janeiro can be seen.

worthy of future admirals. Free transportation was offered, and eagerly accepted by the Mackenzie athletes, to travel from Santos to Rio on a destroyer. Arrival in Rio found most of the participants too seasick to participate effectively. Intramural athletics are, however, quite generally played, the most popular game being soccer football. Educational institutions do not, however, maintain athletic departments, physical education is not offered, and intramural sports are on a completely amateur basis.

LANGUAGE and textbooks are a problem that has no parallel with us. The Brazilian student is, of necessity, possessed of a broader, world-wide outlook because of the language problem. In his later years in college he is able to read English, and often to speak it. English is his second language and he begins to study it early in his educational career. In addition he may be adept in one or more of the romance languages. German is widely used in the south. This polyglot atmosphere creates a difficult situation in technical books. The use of Portuguese is too restricted throughout the world to provide an outlet for scientific works prepared in Brazil. As a result Brazilian texts are restricted to notes prepared by the instructor and either sold or given to the student. The great need for a Pan-Brazilian textbook in sanitary engineering, and the encouragement given by the Institute of Inter-American Affairs and by SESP has emboldened a group of about thirty-five educators to compile a textbook, on a voluntary basis. The book will be in the Portuguese language and will be especially applicable to Brazilian experience and affairs. It is hoped that the success of this book will point a way towards the preparation of books in other fields, where the need is as great as it is in sanitary engineering.

SESP, the organization that is underwriting the preparation of the book, is one of the oldest of the Point Four "servicos." In fact, its creation antedates the Point Four program. It was created during the second World War to improve and to protect the health of the population in the Amazon region in order to facilitate the production of rubber. From that early start it has spread its services, mainly in rural regions, throughout the country. Its activities are widely known and acclaimed. It holds an anomalous position in Brazilian governmental organization with its quasi-international status and its activities centered in much needed public services.

Travel in Brazil is in the "Air Age." Topography and economic conditions were unfavorable to the early development of overland transportation so that railroads and highways are underdeveloped. Population has been concentrated along the coast, depending principally on the sea for communication. Of the many large rivers in the country few are used for long-distance transportation into the interior. Today, transportation by air and the rapid development of the interior are proceeding together. Fast and frequent service is available between the principal cities and trips into the interior are regularly scheduled. Air transportation is developing on the best standards of safety and reliability and, to a traveler, visiting widely scattered universities, it is a necessity. To a confirmed traveler on the land taking to the air has been more of a shock than any of the landings.

Another cliché about Brazil, nurtured by Brazilians of course, is that "God is a Brazilian." He created a beautiful and fertile country, free from major natural catastrophes such as earthquakes, high winds, floods and fires; with a gentle climate bounded on the south by frost, on the north by hurricanes, on the west by the protection of the beautiful high Andes, and on the east by the seldom-violent South Atlantic ocean. It is indeed a country favored by nature and by man whose history for more than three centuries is marked by no serious wars within its boundaries.—***End.***

About the Author . . .

Professor Harold E. Babbitt, presently sanitary engineering educational consultant to the Ministry of Health in Brazil, and a vice president of NSPE in 1936-37, was born in East Orange, New Jersey, in 1888. He received his B. S. degree from the Massachusetts Institute of Technology in 1911, and his M.S. degree in 1917 at the University of Illinois. He served as a computer with the Sanitary District of Chicago from 1911 to 1913. He became instructor of sanitary engineering at the University of Illinois in 1913 and was a professor of sanitary engineering at the university from 1925 to 1954, when he accepted a post with the Ministry of Health in Brazil.

Professor Babbitt served as captain in the A.E.F. from 1917 to 1919. He is a member of the American Society of Civil Engineers; American Water Works Association; American Society of Engineering Education; Tau Beta Pi, Sigma Tau, Sigma Xi. He is the author of "Sewerage and Sewage Treatment" and the inventor of a device to aid sludge digestion.

COME TO DALLAS!

Professional Development Theme of Annual Meeting in Dallas, June 6-8

PROFESSIONAL development of the young engineer will be the theme of the 1957 annual meeting of the National Society of Professional Engineers in Dallas, Texas, June 6-8.

Starting off with an all-day executive committee meeting on June 5, the affair will continue at the Statler-Hilton Hotel with three days of professional meetings, a series of conferences on professional development for young engineers, and a banquet session at which the NSPE Award for 1957 will be presented to Granville M. Read, chief engineer for E. I. du Pont de Nemours & Company.

The affair will be the twenty-third annual meeting of the National Society. Several hundred senior engineering students from Southwestern colleges will attend, along with NSPE members from all over the country. President Robert J. Rhinehart will officially call the meeting to order on June 6.

A highlight of the meeting will be a one-day series of conferences on the professional development of young engineers in industry, private practice, government, and education. The conferences, scheduled for June 7, will feature panel discussions and question and answer sessions led by leading engineers in each field.

Moderated by Wayne E. Ault, chairman of the NSPE Engineers-in-Industry Subcommittee, the conference on young engineers in industry will have a panel made up of the following participants: Winston Oberg, employee relations department, Esso Research & Engineering Company, "Guiding the Young Engineer Toward His Greatest Potential;" T. M. Medland, executive director, The Association of Professional Engineers of the Province of Ontario, "Solving the Problems of Young Engineers Through a Professional Approach;" Frank H. Hurley, manager, management education & college relations, American Cyanamid Company, "Professional Advancement on the Technical Ladder;" and Dr. F. C. Peterson, director of industrial relations, Dow Chemical Company, "Evaluating the Young Engineer."

Anthony J. Del Mastro, chairman of the NSPE Engineers-in-Education Subcommittee, will moderate the conference on young engineers in education. On the panel will be Dr. John C. Calhoun, Jr., dean of engineering at A&M College of Texas; Prof. Robert E. Stiemke, director of the school of civil engineering at the Georgia Institute of Technology, and Dr. Clark A. Dunn, executive director, Division of Engineering Research, Oklahoma Institute of Technology, Oklahoma A&M College.

The conference on young engineers in government will be moderated by Leonard White, chairman of the NSPE Engineers-in-Government Subcommittee, and will include panelists D. H. McCoskey, chief of the engineering branch of the Southwestern division, Corps of Engineers, Dallas, and R. L. Schmidt, Texas Highway Department.

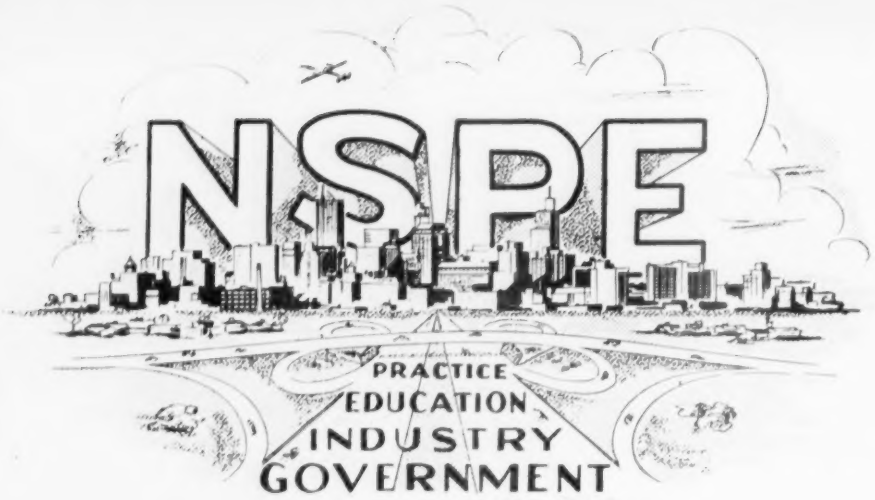
Linas H. Brown, chairman of the Engineers-in-Employ-of-Private Practitioners Subcommittee, will moderate the conference on young engineers in private practice. Representing employees will be John A. McFee, of C. Warren Bogan & Associates, Washington, D. C.; Tom Lowe, Jr., of Michael Baker, Jr., Inc., Jackson, Miss., and Allan Curry, of the firm of Max A. Mehlburger, Little Rock, Ark. On the panel representing employers will be Alfred J. Ryan, of Alfred J. Ryan and Associates, Denver, Colo.; C. D. Williams, of Patchen and Zimmerman, Augusta, Ga., and Alex Van Praag, Jr., of Warren & Van Praag, Inc., Decatur, Ill.

At the noon luncheon an address will be given by J. Eric Jonnson, president of Texas Instruments, Inc., and president of the Dallas Chamber of Commerce whose topic will be "The Young Engineer."

At the conclusion of the conferences on June 7, the

(*Continued on page 21*)

One of the largest athletic stadiums in the nation is the Orange Bowl in Dallas.



INTERESTING FACTS

The Twenty-third Annual Convention of the National Society of Professional Engineers will bring together all branches of the Engineering Profession, within whose portals are the men in responsible positions who buy and specify your product.

Previous conventions have averaged well over 1000 attendance, however, plans and accommodations for this Dallas meeting anticipate attendance of 1500. Emphasis will be given to the young Engineers. Educational exhibits will be featured, and we expect approximately 400 senior engineering students from Southwestern colleges.

Convention Headquarters will be held at the new Statler-Hilton Hotel, Dallas, Texas, June 6, 7, 8.

Dallas, located in the heart of the greatest business market in the nation, offers the manufacturer and the distributor an opportunity to exhibit to a business potential the salesmen may never see except at this convention.

You are invited, as representatives of industry manufacturing and selling equipment, supplies, processes, and services — from the small supplier to the industrial giant — to display your products, materials and services, through the selective medium of the "Engineer in Practice, Education, Industry, and Government."

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Chairman, Exhibit Committee, Texas Society of Professional Engineers,

Westinghouse Electric Corp., Fidelity Union Life Insurance Bldg., Dallas, Texas

Meeting

(*Continued from page 19*)

National Society will present the results of the latest executive research survey made under the sponsorship of the Professional Engineers Conference Board for Industry. The survey covers non-salary motivations of the professional engineer in industry.

Conducted by the Opinion Research Corporation of Princeton, N. J., the survey report is based on extensive personal interviews with several hundred engineers employed in representative industrial firms. The detailed "depth" interviews were designed to elicit information about the factors motivating engineers who have been employed in industry at three levels of career experience—four to eight years, ten to fifteen, and over twenty-five.

The results of the survey will be published in booklet form and distributed throughout industry. The four previous reports developed by the Conference Board, a nonprofit, educational and research organization, dealt with engineering-management communications, attracting and holding engineering talent, engineer training in industry, and the utilization of engineering manpower.

During the three days of professional meetings, the officers and members will discuss federal policy regarding the teaching of mathematics and science in the high schools, problems of engineering schools, the ideal registration law developed by the Society, and a full agenda of other matters concerning the engineering profession.

A state awards luncheon June 8 will feature an address by Congressman Bruce Alger, of Texas.

Granville M. Read, the 1957 Award recipient, will be presented with a plaque at the final banquet session June 8. He is the seventh individual to receive the National Society's Award since it was first made in 1949. The others were: Herbert Hoover, 1949; David B. Steinman, 1952; Charles F. Kettering, 1953; Harry A. Winne, 1954; A. A. Potter, 1955; and Donald A. Quarles, 1956.

Mr. Read was selected for the Award for his "outstanding accomplishments in engineering, his leadership in the professional development of engineers, his conscientious vigilance for safety in engineering, and for his engineering contributions to the public welfare, national defense and industrial progress."

Educated at Virginia Polytechnic Institute and the Sorbonne, Mr. Read began his career at du Pont in 1917 as operator of a nitro-cotton centrifuge. After World War I he assisted in the development of the firm's industrial engineering division. In 1941 he became manager of the engineering department's war construction division. He was appointed assistant chief engineer in 1943, and chief engineer in 1946.

Among the many points of interest for those interested in sightseeing while in Dallas is the State Fair Museum of Fine Arts located in the State Fair Park.

In 1951 Mr. Read organized a "year-in-industry" program whereby selected deans and professors of engineering colleges move with their families to Wilmington to spend a year with the du Pont engineering department.

Another highlight of the banquet will be the installation of NSPE's officers for the 1957-58 term.

A petition for affiliation by the Wyoming Society of Professional Engineers will be presented and voted on at the meeting.

An extensive social program has also been planned for members and their wives, which includes a ranch-style party following the professional meetings on June 6 plus sightseeing tours throughout the Dallas area.

The Complete Program Follows:

Wednesday, June 5, 1957

9:00 a.m.	NSPE Executive Committee
1:00 p.m.— 6:00 p.m.	Registration Desk Open
7:00 p.m.	Board of Directors Dinner and Meeting

Thursday, June 6, 1957

9:00 a.m.— 4:30 p.m.	Registration Desk Open
9:00 a.m.—12 noon	Professional Meeting and Visit Exhibits
12:30 p.m.— 2:00 p.m.	NSPE Regional Luncheons

(*Continued on page 42*)

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DOUBLE ROOMS	10.00	12.00	16.00
TWIN ROOMS	12.50	14.50	18.00
SUITES	20.00	27.00 to 38.00	50.00 to 65.00

Engineering Employment Practices Digest

A short digest of a monthly bulletin published by the National Society of Professional Engineers in the interest of advancing cooperative relations between professional engineers and their employers. To regularly receive the complete publication which is distributed widely to industrial, commercial and educational organizations, write the NSPE, 2029 K St., N.W., Washington 6, D. C.

✓ **A highlight of the NSPE annual meeting in Dallas next month will be four all-day conferences, June 7, at the Statler Hilton Hotel, on professional development of young engineers. Separate groups will confer in industry, government, education and private practice. For the program and list of speakers refer to the complete story on the meeting elsewhere in this issue.**

* * * * *

✓ *Professional engineering employees and technicians of the Minneapolis location of Minneapolis-Honeywell Regulator Co. are scheduled to vote on May 8 to choose between United Auto Workers, AFL-CIO; Engineers & Scientists of America, federation of engineering unions; or "no union." The professionals and the technicians will vote in separate groups. A consent agreement for the election was reached after the UAW group objected to allowing part-time and co-op students to vote, then reversed its position and agreed to their inclusion. Before the final agreement it appeared that all issues would have to go to formal NLRB hearings, which would have delayed the election for several months. The company insisted that the co-op students be allowed to vote because most of them will go to work for Honeywell after completion of their education-work program. The "no union" group is urging fellow employees to vote against both UAW and ESA, giving the company a chance to prove that the professionals do not need a union to advance their interests and work out their problems.*

* * * * *

✓ UAW leaders regard the forthcoming vote at Minneapolis as a key to the future of organization of engineers and technicians. The recent UAW convention amended the constitution to provide special bargaining and strike rights for skilled groups, apart from the production workers. UAW Vice President Leonard Woodcock told the delegates that if the union is successful at Minneapolis it will extend its organizing campaign to other companies, stating, "every engineer is watching this election; if we win it, we can begin to do the job."

* * * * *

✓ **"Satisfying the Salaried Employee," a new 64-page booklet by the National Association of Manufacturers, devotes a special section to information and suggestions on engineering and scientific employees. Under "Special Needs of the Professional Employee," eleven suggestions are offered: recognition as members of a profession, credit for outstanding work, proper dignity and title for professional positions, challenging work, opportunity for promotion and salary progression equivalent to members of management, accept professionals as members of the management team, liberal policies for personal time-off, adequate physical facilities and equipment, specialization opportunities, encourage activity in engineering societies, opportunities for research and development work. Copies are available from NAM's Industrial Relations Division, 2 East 48th St., New York City, at 50¢ each.**

* * * * *

✓ *NLRB's General Counsel has dismissed an engineering union charge against a company for refusing to bargain with the union on behalf of engineering employees of a new plant. The union represents engineers at the existing plant and claimed jurisdiction at a new midwestern plant. The General Counsel ruled, however, that no engineers had been employed in the new plant at the time of investigation of the charges, and that it was doubtful, in any event, that the new plant could properly be regarded as an accretion to the present plant.*

* * * * *

✓ The National Committee for the Development of Engineers and Scientists (Bevis Committee) will hold local "clinics" in representative industrial areas aimed at determining the most effective ways of making use of available engineering talent. In addition to utilization, which will be stressed, the clinics will consider improvement of morale and incentives through adequate salary structure, opportunity for advancement, liaison with top management and professional recognition.

* * * * *

✓ **The Ontario (Canada) engineering association has developed a plan to certify engineering technicians. Five grades are established, the latter two requiring passage of examinations. The certification will not permit membership in the association or give the holder any right to practice as a professional engineer. It will provide recognition, however, by defined classifications and will recognize the technician as part of the engineering team. The association also feels it will be valuable for those who do not pass the P.E. examinations—people who are probably excellent technicians, but not of professional caliber.**

* * * * *

✓ *A Bureau of National Affairs forum report, based on replies from eighty-nine executives, reveals that only about fifteen per cent of the companies carry on formal training programs, but most reimburse employees who take outside courses on a voluntary basis. Most companies pay for employee membership in professional and technical societies, and almost always the professionals may attend such meetings on company time. A majority of the companies said their special problems with professionals related to professional morale.*

Registration and the Screening Out Of the Unethical

By Dean C. J. Freund

College of Engineering, University of Detroit

A PROMINENT and reasonably successful consulting engineer had this to say not so many days ago:

Professional registration works out very well. I am all for it. It keeps down the supply of engineers, and so the demand keeps up, and so do the fees I can charge. I would be in a pretty fix if I had to compete with all the men our state board declines to register because they can't pass the examinations.

This man is a good example of what we engineers are often accused of: that we know our business but have only a vague concept of what engineering means to the citizens and the communities.

I take it completely for granted that most of the readers know and firmly believe that the only reason for registration of engineers is the reason given in the registration laws, i.e., to protect the public. When a state board registers an engineer, it says in effect: "We certify that this man is competent to design buildings or machines in such manner as to secure the lives, limbs and properties of our people."

Now let's take a look at registration as it applies to the total responsibility of the engineer.

Fortunately, very few engineers are scoundrels. But every once in a while one turns up. I am thinking of a scandal in engineering. I don't know all the details but the general situation was something like this. A consulting engineer prepared drawings and specifications for a warehouse costing about three-quarter million dollars. The contractor prevailed upon the engineer, the building inspector and his own superintendent to overlook the substitution of inferior structural materials of different kinds. The four participants in the crooked deal gained some thousands of dollars which they distributed between them.

Some years later sections of the building weakened. The owners became suspicious. A board of investigation was appointed and went to work, and the dishonesty was disclosed.

I can't give you the name of the engineer. In fact, I don't know his name and don't want to know it. But I can tell you some things about him which were related to me. He is an exceedingly able engineer, even brilliant. In college he learned technology quickly and understood it well. He was a leader in his class and displayed

This scene followed the tragic collapse of a four-story building in Jackson, Michigan, recently, when ten were killed. Such accidents led to the registration of engineers to "protect the public."

—Photo by Clark Equipment Co.

much creative aptitude and exceptional resourcefulness.

When he wrote the state board examinations he turned in remarkable papers. He stood at the top of seventy odd candidates in basic science and mathematics, and likewise in engineering applications and practice. But what is most remarkable, he stood even higher than in any other subject in engineering law and ethics. Indeed, he wrote one of the very best examinations in ethics on record with that particular state board.

He did so well in his ethics examination that a member of the state board confidentially suggested to the dean of the state university that this engineer might well deliver lectures on engineering ethics before the student body.

Here we have a situation which shows up the complex interplay between engineering ethics and state board registration. The state board examiners in this case were in no way remiss in their appraisal of this candidate. The board conscientiously examined him and found that he knew his mathematics, his chemistry, his physics, his mechanics and the other engineering sciences. The board looked into his ability to design structures and found that he possessed such ability.

The board went further. It felt responsible for protecting the public against dishonest practice. The board examined the man and discovered that he had an unusually clear understanding of engineering ethics. They ascertained that he knew what is right and knew what is wrong.

That is all the state board could possibly do. There was one thing they could not do, and that one thing is very important. They could not find out, they had no way of finding out, whether this man would actually do what is right and avoid what is wrong. The state board was helpless against the following maxim: Evidence that a man knows what is right is no evidence that he will actually do what is right. The most wicked man in the world could conceivably be an authority in morals. The state board could not guarantee the integrity of the man.

Integrity is just as necessary for the professional engineer as technical competence. This is particularly so because the engineer's client or employer very often knows nothing about engineering. He has to take the engineer's word when he insists that cheap cast iron will not do, and that the construction has to be of expensive copper plate. Similarly, I have to take the word of a medical examiner if he tells me that my appendix can't be treated and has to come out. As far as my knowledge goes, the appendix may be perfectly good and the surgeon may be taking it out just to collect a handsome fee.

The state board doesn't know, can't know, if the applicant for registration is honest. All the state board can find out is that respectable men testify that, to their knowledge, he has always been honest. The state board examination may prove that a man is technically competent, and may even prove that he knows what integrity means. But the examination can't prove that he will be honest and honorable.

I am not expounding new doctrine. It must be nearly twenty years ago that Willard Chevalier addressed the National Council of State Boards of Engineering Examiners and told them that the registration laws are so much paper and ink unless the engineer is upright to begin with, and unless engineers stand together to support a policy and a tradition of complete professional responsibility.

Registration can't make engineers honest. Registration can't even prove that they are honest.

I don't want to be misunderstood. I believe in registration and I am registered. I am convinced that registration has done much more than any one thing to improve the professional status of engineers. But I do contend that there are some things which registration can't accomplish. One of these things is to verify the ethical standards of the individual engineer.

Such buildings as this Alcoa Building must be technically perfect. Registration is one way to assure competent engineers but, the author writes, laws alone are not enough.

To me at least it seems clear that the engineer must do more than learn ethics. He must be motivated to do right and to avoid wrong in the practice of his profession.

We teach ethics in the College of Engineering of the University of Detroit. The course is required of all engineers. But we are not fooling ourselves. We know very well that merely to instruct students in ethics will not make them ethical. I do believe that our students and our graduates have been upright and honest on the whole. We have had no serious disciplinary or behavior problems during twenty-five years in a student body which has ranged from 500 to 2900. Furthermore, in twenty-five years there has not been a single graduate involved in any kind of scandal.

We maintain in the University an environment or a spirit which is conductive to good character, and gives to the students a motive for doing the right thing. This environment is created by the religious auspices under

Two professions working together for the benefit of humanity: Dr. Travis Winsor, noted cardiologist, considers IBM card which may hold many answers to the mysteries of the human heart. On the table is a model of the heart and in the background is part of a battery of electronic computers being used in the study.

—Photo by Lockheed Missiles

which we operate. Both the faculty and the student body include large numbers of all faiths. But the atmosphere of the University is strongly an atmosphere of religion. This is a motive for ethical conduct. I firmly believe that the motive is effective, but I don't insist that it's the only way to do it.

For example, President Du Bridge of the California Institute of Technology wrote that the spirit of integrity in his institution is so strong that they not only hold their examinations under the honor system, but any student who leaves valuable personal property—camera, slide rule, overcoat—anywhere about the campus will find it there when he returns. Dr. Du Bridge did not say specifically how such spirit is maintained but he clearly gets admirable results.

Clear cut policies and the good example of leaders can accomplish wonders in deportment. For some time I was attached to the 305th Infantry Regiment. At the time the regiment was recruited exclusively in New York City. Some of the recruits came from the less favored sections of the city, and a few of them were not paragons of patriotism and cooperation. I remember one who had to be literally carried from the railroad station to the barracks.

But after a year of training the regiment became high spirited, proud, well-coordinated, efficient and enthusiastic. When the unit got into action it gave a splendid account of itself.

The officers accomplished this result because they consistently talked about training objectives, and about the honor and solidarity of the regiment, because they regularly staged colorful and stirring military ceremonies, and particularly because their own conduct and devotion were exceptional. In the officers the men saw every day the combination of masculine qualities which they naturally admired, and the ideals and purposes of the regiment. For instance, the men were inspired when an officer was willing to forego his precious week-end pass to remain behind and work with a half dozen of them who had been unable to master the special technique of throwing a grenade.

ENGINEERING societies, such as the National Society of Professional Engineers, are probably the most potent influence for creating and maintaining motives for ethical conduct. The societies are the custodians of the spirit, the traditions and the aspirations of the profession. Fortunately, not only the American engineering societies but the engineering societies of Western nations have successfully nurtured a tradition of upright deportment over the years.

There is no time today to explore all the motives for ethical conduct which the colleges and societies might utilize in their business of fostering ethical conduct. The Committee on Ethics for the American Society for Engineering Education listed the following motives in its original statement some years ago:

a. Tradition and history of the Western World.
b. Natural Law.
c. The Golden Rule.
d. Religion.

All of these are adequate motives for ethical conduct.

If there are any sharp philosophers reading this, I hasten to explain that I fully recognize the essential difference between religion as a motive for ethical conduct, and religion as a basis for principles of ethics, which is an altogether different question.

(*Continued on page 34*)

About the Author . . .

Dean Freund

Clement L. Freund, dean of the College of Engineering at the University of Detroit, was born in Appleton, Wisconsin, August 7, 1895. Dean Freund received his A.B. degree from Campion College in 1916 and his M.E. degree from Marquette University in 1922. He joined the Falk Corporation in 1922 as educational director and at that time was also instructor of evening technical courses at the Milwaukee Vocational School until 1932 when he assumed his present position. Dean Freund served as a first lieutenant in the first World War.

In 1953, he was cited by the Common Council, City of Detroit, for twenty years' service and for his contribution to the industrial growth and progress of the community. He is a Fellow of ASME; honorary member of the American Foundrymen's Society; past president of the ASEE; past president of the Michigan Engineering Society, and a member of Tau Beta Pi and Alpha Sigma Nu.

Study on Engineers Employed By Consulting Firms Now Available

By LINAS H. BROWN, P.E., CHAIRMAN
Engineers-in-Employ-of-Private Practitioners Subcommittee
NSPE Employment Practices Committee

A COMPREHENSIVE survey of the status of engineers employed by consulting engineering firms has been completed by the Subcommittee and the report has now been published for general distribution. The 40-page report contains basic statistical data on salaries, hours, geographic distribution, characteristics of the consulting firms, distribution of engineering employees by grades (including separate salary tabulations for each grade), numbers of engineers employed by size of firms, fringe benefits, length of workweek and overtime pay practices.

The Subcommittee is a relatively new one in the NSPE structure, and undertook this project as the first step in its long-range program of obtaining the basic facts about the composition and status of engineers employed by consulting firms. The next step is an analysis of the findings and the development of programs to meet the needs of the engineering employees in their professional and economic advancement. It is believed that this is the first such attempt to survey specifically this important group of the engineering profession, whose position is somewhat unique and apart from that of engineering employees in industry, government, and education. This report is distinct from the general NSPE Salary Survey, which covers all members of the Society and which is published bi-annually. The next general NSPE Salary Survey, covering 1956 income data, will be published in June of this year.

The report now presented to the membership was based on the return of questionnaires from 311 consulting firms, ranging in size from those employing one engineer to those which employ as many as 300 engineers. It reflects, however, data for a total of 6,407 engineers. The average number of employees for all firms is 20.6, but the data has been analyzed by size of the firms to eliminate undue weight to the very large firms.

In reviewing the salary findings, the readers are urged to keep in mind that the report covers salary alone, and does not include bonus pay, which is quite general in consulting firms; nor does it include overtime payments. Also, it should be noted that owners and partners were not included in the survey statistics. The median salaries, as reported, are shown by the eight grades of NSPE's "Recommended Grades, Duties, Responsibilities and Qualifications for Pre-Professional and Professional Positions." This form is reproduced in the report. The median monthly salaries for the eight grades are $358.00, $433.55, $504.40, $582.12, $657.70, $768.89, $947.02 and $987.54, respectively. Appropriate charts for each grade show the starting and top salaries by size of firms.

One finding of particular significance shows that only 40.9 per cent of the engineering employees are registered professional engineers, and 3.0 per cent are registered as engineers-in-training. This indicates that much work needs to be done by the Subcommittee and others to bring the importance and value of registration to the attention of many engineering employees, as well as to the owners and principals of the firms.

The picture on fringe benefits is derived from a list of six rather standard items. Altogther, the 311 reporting firms enumerated 879 benefits, or close to three per firm. The most popular fringe benefits are paid vacations, bonuses, hospitalization insurance, life insurance and profit-sharing. The standard workweek of the consulting firms is generally forty hours, but 5.8 per cent said they work less than forty hours and 28.0 per cent reported a workweek of 41 to 44 hours. The report shows, by size of firms, the pattern in the types of overtime compensation provided.

It is the hope of the Subcommittee that the report will be studied by both employed engineers and the owners and principals of engineering firms. Suggestions for professional programs as a result of such studies will be welcomed by the Subcommittee. Consulting practice in engineering is comparable to traditional professional practice in other professions because the consulting engineer deals directly with the client. For this reason this report concerning the present and future emissaries of the engineering profession is important to NSPE and to the entire engineering profession.

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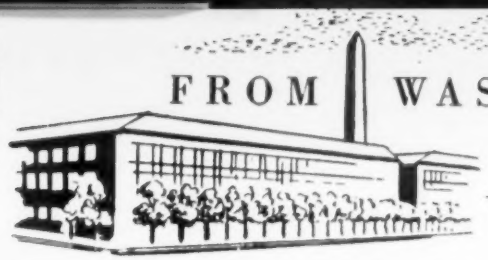


FROM WASHINGTON

By
Milton F. Lunch,
N.S.P.E.'s Legislative Analyst

BUDGET FEVER IN WASHINGTON HITS ENGINEERING-INTEREST PROGRAMS

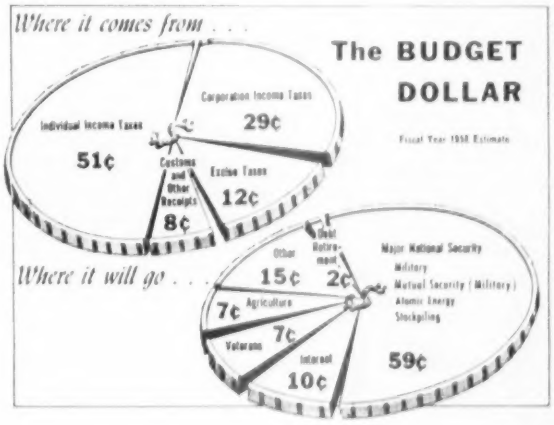
AS this report is prepared, Congress has voted itself a ten day Easter recess, with most of the M.C.'s returning home to sound out voter sentiment and, as one wag has put it, to sit on the fence with one ear to the ground.

This interval marks approximately the half-way point of the first session of the 85th Congress and gives the Washington pundits an opportunity to review the record to date. Such a review is the easiest in many a year because in the first four months Congress has completed action on only two major items—the Mideast Eisenhower doctrine and the excise-corporate tax extension. Of course, there has been much activity in the committees and some major legislative items will undoubtedly emerge in the next three to four months. But there are many forecasts, including those by members of Congress, that the entire session will produce little in the way of important legislation.

The meager present and anticipated congressional output can be attributed to two major factors. First, this is not an election year and next year is an election year, thus there is a political desire to hold back the legislation with voter appeal until the time when it will be fresh in the minds of the voters. This is a normal situation, however, and does not account for the substantial difference between this first session and other first sessions. The more important reason is "budget fever"—an almost unprecedented adverse reaction against the Administration's proposed budget of $71.8 billion.

When first sent to the Hill earlier this year there was little outcry against the gigantic budget. But when Secretary of Treasury George N. Humphrey made his famous statement about the budget being too large and that, unless cut, it might bring on a depression that would "curl your hair," the economy advocates went into high gear. And when President Eisenhower added that it was up to Congress to cut the budget, coupled with a deluge of letters from "back home" that some heavy cuts were demanded, budget-cutting became the first order of political survival. As one Congressman is said to have put it: "The trouble is that it's harder and harder to pass anything involving money, and there are darn few things that don't involve money." Thus, new programs have lagged and existing programs are faced with cut-backs. All of this, with politics much involved in each and every move and counter-move, indicate that this will be a "go-slow" session, with most of the major legislation going over for 1958 action.

In the face of this picture the following capsule review of items of particular engineering importance may suggest the outlook for the immediate present and the long-range future.



Tax Relief for Self-Employed—This long-standing proposal to amend the tax laws so self-employed persons can build a private retirement fund by putting aside up to ten per cent of their annual earnings (not to exceed $5,000 per year) on a tax-deferred basis has not received further consideration even though a survey shows an overwhelming majority of both houses in favor of it. Almost all major professional organizations, including NSPE, have supported the legislation for some years, and recently the American Thrift Assembly was formed to coordinate support by the organizations. NSPE has named Robert C. Vogt, P.E., of Cincinnati as its representative to ATA. The Jenkins-Keogh bill to establish this plan will cost the Treasury some money, how much is uncertain. Congress is

(Please turn the page)

certainly in the mood to cut taxes as soon as possible, but practical political considerations indicate that unless some general tax relief is granted low-income groups little will be done to grant relief for a special class, even though their case is unique and the plan is intended to place them on a par tax-wise with the employed group.

Pay Increases for Federally-Employed Engineers & Scientists—There is little dispute that something needs to be done for the Government to hold its engineers and scientists who are leaving Federal employment in large numbers for higher-paying private jobs. Again, it will cost money. The Moss-Gubser bills call for a separate professional classification and salary adjustments. NSPE is backing this legislation in general. Many in Congress are afraid that if they vote higher pay for engineers and scientists they will be under fierce pressure to vote salary increases for all other Federal employees. And that costs a lot of money. If such general increases are to be granted they would rather do it in an election year than now.

Federal Aid to Higher Education—Despite the sponsorship of many influential members of both houses for Federal programs to provide scholarships for higher education, and particularly for engineering and scientific study, there will apparently be no such action this year. There is, of course, opposition to the basic idea aside from the cost, but the emphasis on budget reduction lends weight to the impression that Congress will pass this one over completely. In fact, there is now serious doubt that the Federal aid to education program for elementary and secondary school construction will pass with its estimated price tag of $1.3 billion over a four-year period. The President's Committee on Education Beyond the High School will be put out of business completely at the end of the current fiscal year, unless the Senate restores all or part of the funds. The House knocked out the entire $200,000 for this purpose, most of which would have gone to the states to finance state higher education conferences.

Honorable George N. Humphrey, Secretary of Treasury

Water Pollution Control Grants—The Water Pollution Control Act, which took effect last July 1, authorized $50 million a year for ten years for grants to states and municipalities for the planning and construction of treatment works. In the first fiscal year of this program state and local requests totaled nearly $35 million more than the $50 million authorized and appropriated. The entire program was almost scuttled, however, when the House tentatively cut the entire amount, then restored it on a roll call vote. But the House did cut $110,000 from an original $1.1 million budget request to conduct water pollution research programs. Mark D. Hollis, chief sanitary engineer of the Public Health Service, has asked the Senate to restore the funds, stating "it is a most urgent need that we understand the new types of pollution that are entering our streams."

After much needling, including a House resolution sent to the White House asking that the President tell Congress how to cut the budget which he said was too large and should be cut, President Eisenhower has outlined his ideas of cuts from $1,342,000,000 to $1,858,000,000, warning, however, that any substantial reductions would cripple many essential programs and endanger the National safety. Speaker Sam Rayburn said the House has already sliced $1,141,175,749 from appropriations and will continue to chop. "We will cut from the budget enough to justify a tax cut this year, or early next year," he said. House Appropriations Committee Chairman Clarence Cannon said the President's proposals are "too little and too late," and that reductions will total $4 billion.

Among the slashes mentioned by the President of engineering interest are:

New spending authority for public works—a cutback of $200 million by delaying less urgent projects.

College housing—the authorization be reduced from $175 million to $150 million.

Construction by Corps of Engineers—adjustment of construction schedules, with the new spending authority of the Corps reduced by $13 million.

Army procurement and production — a $516 million item could be delayed a year "at the expense of efficient programming."

The President listed a series of recommendations to improve the Federal budgetary situation, including encouraging state and local groups to engage in partnership with the Federal Government in major water resources development, and rejection of new projects not approved by the Board of Engineers for rivers and harbors and not reviewed by all interested parties, including the affected states. He added that there should be more local participation in approved projects, and authorization and construction should be withheld in all but the most urgently needed projects.

Some critics say that the economy wave which has hit Washington is a "phony," that most of the cuts will be restored when all is said and done, and that, in any event, many of the cuts merely represent deferred appropriations which will have to be made up next year.

Whatever the truth may be, the budget-cutting spree is on for fair, and many projects and programs of particular interest to the engineering profession will remain buried this year along with a larger number of general interest. The national defense items in the budget will not be cut substantially and these, coupled with fixed charges which cannot be reduced, do not leave enough room for the most zealous budget-cutters to make major and substantial inroads into the gigantic Federal expenditures.

National Threat Seen in D.C. Law Bill

By Oscar H. Beasley, P.E.,

President, District of Columbia SPE

THE D. C. Society of Professional Engineers is vigorously waging an opposition campaign against three companion bills recently introduced in Congress which would amend the D. C. Professional Engineers' Registration Act by exempting electrical contractors and master electricians from the Act. These bills, if enacted into law, would, in effect, permit master electricians and electrical contractors to engage in professional engineering without being required to register as professional engineers.

Two developments preceding and leading up to the introduction of these bills were the recently-announced D. C. regulations under the local electrical code which require electrical engineers, as distinguished from electricians, to plan and design projects exceeding 200 amperes; and a suit in District Court by the Electrical Contractors Association of Washington seeking to have these regulations declared illegal. The Association claims that the regulations "will seriously jeopardize and may ultimately destroy" the businesses of electricians inasmuch as electricians, they claim, have been doing such design in the District since 1904.

While this case is pending, one Senate and two House bills have been introduced in Congress, which has jurisdiction over local D. C. affairs. The Senate bill is co-sponsored by Senators James G. Beall and John M. Butler (S. 1909), while Representatives Richard E. Lankford and DeWitt S. Hyde have each introduced one (H.R. 6942 and 6936 respectively). All four of the sponsors are from Maryland. These bills would exempt master electricians and electrical contractors from the provisions of the D. C. Registration Act, resulting in a situation wherein they could plan and diagram all types and sizes of electrical projects without being registered as professional engineers. The Registration Act, adopted by Congress in 1950, requires that professional engineers do all electrical engineering design work, and should these bills become law, an anomalous situation would exist in that a person holding himself out as an electrical engineer would have to be registered as such before he could plan or design electrical projects, while a person holding himself out as an electrical contractor or master electrician could perform the same job without the requirement of registration.

To coordinate and strengthen all efforts seeking to defeat these bills, the D. C. Society has sent letters to each of its 400 members asking that they support this campaign by writing to congressman urging a vote against these proposals should they ever come up for consideration. The members were requested, in stating their opposition to these bills, to point out that legislation of this type presents a serious threat to public health, welfare and safety in that persons who have not proved their competence for engineering by registration would be permitted to plan and diagram projects which the public is exposed to daily.

The D. C. Society has also enlisted the aid of NSPE by asking that the National Society write to each state society which has a congressman on either the House or Senate District of Columbia Committee, to which these bills have been referred, suggesting that each state society in turn write their appropriate congressman declaring the Society's opposition to these bills and requesting that the congressman vote against them should they come before the Committee for consideration. NSPE has complied with this request, which recognizes that cooperation among the states and the National Society is invaluable in achieving success for a project of this type. In its memorandum to the state societies, NSPE cautioned that bills of this type could establish a dangerous precedent by allowing an exemption from a registration law for certain persons in that such a precedent might be used by opponents of registration in the various states to justify similar exemptions under the state laws.

It is the considered opinion of the D. C. Society that these bills constitute a complete reversal of the modern trend toward more strict registration requirements and procedures for those persons performing engineering work which has an effect on public safety. Furthermore, a Federal action of this type, even though local in nature, could spread to the states and very seriously set back the progress which has been made in engineering registration.

If the individual members of the National Society of Professional Engineers would like to help in this matter they should write their congressman and senator, declaring their opposition to these measures, and mentioning the adverse and detrimental effect of these bills upon professional engineers. The emasculation of a Professional Engineers' Registration Act by Congress could establish a pattern which, once moving, would be extremely difficult to stop. "Grassroots" cooperation is essential now if we are to protect our registration laws and thereby, the public interest.

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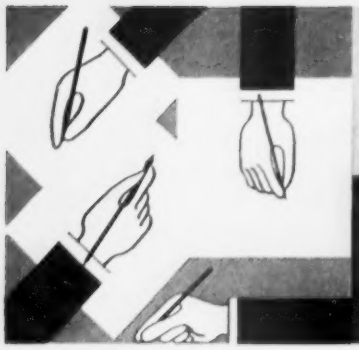

Professional POSTSCRIPTS

For anyone thinking of a job change these days, the ability to prepare a good resume of one's career is a must. The importance of being able to "sell" yourself on paper is ably dealt with in the following paper recently sent to—PP—by the Orville E. Armstrong Company. After reading this piece you may care to tear out this page which carries a Sample Resume.

—PP—

A resume for job seeking is a brief sketch of your background. It should cover experience, education and personal information of direct interest to a potential employer. The general principles of good business letter arrangement apply as to spacing and the amount of material allocated to each page. The sequence of material should be as follows:

1. Name, address and telephone number at the top of the page. Additional material of a statistical nature (personal, education, military service, etc.) should be recorded in the last section unless you are using a standard personnel form. (See Sec. I, sample resume.)

2. A brief summary of background follows. This section contains a condensation of your entire experience record and accentuates those areas which are directly related to your objective in a new position, i.e., Manager, Engineer, Sales, Purchasing, Traffic, etc. (See Sec. II, sample resume.)

3. Directly following the summary of background is the objective. Make a positive statement concerning your job objective. In many instances, applicants are inclined to omit this section, intending to apply under several occupational titles. This can be a near fatal error, since the interest of an employer can not be sufficiently aroused unless you can indicate clearly the position or positions that interest you and for which you believe yourself to be qualified. In most instances you can select an objective that is broad enough to cover your qualifications. This may then be subdivided into specific occupational titles. (See Sec. III, sample resume.)

4. Experience record is the next entry. Start by giving the name and address of your most recent or present employer; your position in the firm; and a comprehensive but brief explanation of your responsibilities, functions and activities. Conclude this description with inclusive dates of employment in months and years. Follow this paragraph with similar entries on prior positions held by you. (See Sec. IV, sample resume.)

5. The last section of your resume may be divided into three general entries: (a) Education, which should start with the name and address of the

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Sample Resume

(Sec. I)

ROBERT W. HOWARD
1113 Labelle Road
Westbury, N. Y.

EDgewood 5-6874

(Sec. II)

SUMMARY OF BACKGROUND

Six and one-half years experience as an electrical engineer in the fields of pulse techniques, servo-mechanisms, reliability, environmental analysis, support equipment, specifications, cost estimating, contracts, system synthesis applied to aircraft and missile control systems and bombing and navigation systems. Two and one-half years of this time have been in a supervisory capacity responsible for a 13 man effort.

During 5 years of this period graduate school was attended in the evenings leading to the M.S.E.E. and the completion of all class credits toward the Dr. E.E.

Particularly competent to assume technical, administrative and business responsibilities of either a broad project or of a challenging specialized research nature.

(Sec. III)

Fully qualified by experience and ability for position as
ELECTRICAL ENGINEER
PROJECT-RESEARCH

(Sec. IV)

Experience Record

THE SPERRY GYROSCOPE CO.,
Great Neck, N. Y.

Initially assigned consulting responsibility on control system synthesis on a subsonic missile and synthesis and development of a barometric and terrain height system concurrent with the assignment to establish the basic principles upon which an effective reliability program for advanced missiles could be based.

The latter effort led to an engineering group leader assignment on an advanced inertial guidance missile on reliability, automatic support equipment, specifications, estimating and contract work. A total of 13 engineers were under my direct supervision for this task.

The reliability effort was of the broadest possible scope including: component selection and test; environmental analyses, such as, transient heat flow resulting from aerodynamic heating and acoustic energy transmission; system analysis and the determination of the need for redundancy; the analysis of environmental test facility requirements and the preparation of specifications for their purchase, etc.

The assignment upon specifications and cost estimating was concerned with the detailed knowledge of military specifications, preparation of systems specifications, preparation of cost estimates upon receipt of a request for a quotation and the preparation of statements of work to accompany the quote.

Following the above, I was assigned the task of advanced system study on a bombing and navigation system leading to the preparation of a proposal and cost estimate for the system. At present, the effort is in the early negotiating stage with the customer and is a multi-million dollar effort.

(August 1953 to present)

PROJECT ENGINEER
ENGINEERING RESEARCH CORP.,
Riverdale, Md.

Assigned to the synthesis, design and development of radar simulators as training aids. Responsible for a 120 vacuum tube unit which required a detailed knowledge of pulse techniques in the 0.1 micro-second to 10 milli-second range.

(Oct. 1952-Aug. 1953)

NATIONAL BUREAU OF STANDARDS,
Washington, D. C.
(Military Service in the
U. S. Army Ordnance Corps)

Drafted in U. S. Army Ordnance Corps in Oct. 1950 and assigned to the National Bureau of Standards on the development of the proximity fuse for bombs, rockets and mortars. The assignment included the design and development of test equipment as well as the synthesis and development of a constant height bomb fuse. The majority of the work was concerned with the design of pulse circuits, signal generators and miscellaneous C.R.T. circuits.

(Oct. 1950-Oct. 1952)

(Sec. V)

Education

College of the City of New York.
Degree: B.B.E., January 1950

University of Maryland
Degree: M.S.E.E., January 1954

Polytechnic Institute of Brooklyn.
Have completed all course requirements for the Dr. E. E., June 1956. Heavy minor in Solid State Physics.

Personal Data

Born May 13, 1928, New York, N. Y. Married—one child. Physical characteristics: height—6 ft.; weight—190 lbs.; complexion—fair; health—excellent.

school from which you received your highest degree or diploma, followed by additional entries working backward through high school. This may be followed by short paragraphs covering special graduate or technical courses, languages, etc. (b) Military service is the next paragraph. This should be brief, giving only branch of service unless your military assignments are directly related to your civilian experience; rank at time of separation; current military status. (c) Personal data is the last entry. This paragraph contains date and place of birth; height and weight; marital status; citizenship status if you were born outside of the U. S.; other information of positive significance. (See Sec. V, sample resume.)

Avoid in all instances, information not of specific interest to your future employer or personal opinions which are not a part of your employment history or personal background.

Reproduction Of Resumes And Letters

There is one point that can not be stressed enough in preparation of job seeking material — "Quality." Your letters and resumes arrive before you. They must represent you in appear-

(*Continued on page* 43)

Indiana Society of Professional Engineers—Annual Meeting, May 3-4, 1957, Gary Hotel, Gary, Indiana.

New Jersey Society of Professional Engineers — Annual Meeting, May 3-4, 1957, Ambassador Hotel, Atlantic City, New Jersey.

Maryland Society of Professional Engineers—Annual Meeting, May 14, 1957, Friendship International Airport, Baltimore, Maryland.

New York State Society of Professional Engineers—Annual Meeting, May 16-18, 1957, Statler Hotel, New York, New York.

California Society of Professional Engineers — Annual Meeting, May 23-25, 1957, Hotel De Anza, San Jose, California.

Pennsylvania Society of Professional Engineers—Annual Meeting, May 24-25, 1957, Lawrence Hotel, Erie, Pennsylvania.

National Society of Professional Engineers—Annual Meeting, June 6-8, 1957, Statler-Hilton Hotel, Dallas, Texas.

Delaware Society of Professional Engineers—Annual Meeting, June 13, 1957, Hanna's Restaurant, Wilmington, Delaware.

Michigan Society of Professional Engineers — Annual Meeting, June 20-22, 1957, Hotel Hayes, Jackson, Michigan.

South Carolina Society of Professional Engineers — Annual Meeting, June 21, 1957, Francis Marion Hotel, Charleston, South Carolina.

Legal News Shows Registration Law Changes

The legislatures of Montana, Idaho and New Mexico have recently passed laws revising and amending their respective Professional Engineers' Registration Acts. The highlights of these statutory changes are analyzed below:

Montana . . .

The new Montana Professional Engineers' Registration Act, which now covers all branches of engineering and land surveying, represents a complete revision of the former Act which was applicable only to Civil Engineers and Land Surveyors. The new law, in essence, follows the Model Law, and provides for the registration of engineers-in-training in addition to registration for qualified professional engineers in all branches.

Professional engineer, as defined in the new law, means "a person who, by reason of his special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis and design, acquired by professional education and practical experience, is qualified to practice engineering * * * as attested by his legal registration as a professional engineer."

So that persons presently practicing a banch of engineering other than civil, who were not required to be registered under the former Act, may obtain registration without undue personal burden, the new Law provides that if application is made within one year from the effective date of the Act, such persons may become registered without examination provided they were performing engineering work of a character satisfactory to the board.

The practice of professional engineering by a corporation is now permitted in Montana provided that each person in responsible charge of activities of the corporation which constitutes such practice is a professional engineer, holding a certificate of registration under the Act.

The duty of enforcing the provisions of the new law, and of prosecuting persons accused of practicing engineering without being registered, is assigned to all duly constituted officers of Montana or its political subdivisions.

Idaho . . .

The new law revising and amending the Idaho Engineers' Registration Act passed both houses of the State Legislature, and received the Governor's signature on March 18, 1957.

A revision to the existing law provides for the inclusion of mining engineers under the Act, and recognizes that branch of engineering as having the same status as other branches.

Under the amended Act, the suspension as well as the revocation of licenses for cause is now authorized. Prior to this change, the only penalty that could be imposed was revocation, but the Idaho Society, in supporting this change, felt that better actual control could be obtained if provisions were made for a penalty of a less serious nature than revocation.

In addition, another revision provides a more workable basis for re-examining applicants for registration, and provides for limitations on the privileges of persons practicing engineering while still in the status of an applicant.

Finally, certain over-all editorial changes were made in order to clarify certain sections of the present law, and aid in its general administration.

New Mexico . . .

A revised and amended New Mexico Professional Engineers' Registration Act, which becomes effective July 1, 1957, contains some significant changes regarding registration, form of organizations permitted to practice and revocation, suspension and re-issuance of certificates.

Prior to the recent changes, New Mexico had no program for the registration of Engineers-in-Training. The new law, however, provides that persons may become registered as engineers-in-training if they are graduates of an approved four year engineering curriculum and successfully pass the first of two examinations, or have six years of satisfactory experience in engineering work and successfully pass the first of two examinations.

A further revision permits profes-

(*Please turn to page* 42)

N.S.P.E.

Believes

UTILIZATION OF ENGINEERS

BY PAUL H. ROBBINS, P.E.

Executive Director

N.S.P.E.

MUCH has been said and written concerning the nation's need for engineering and scientific manpower. The discussions have ranged from comparisons of the development of engineers and scientists behind the Iron Curtain with those of the United States, to extensive and diverse proposals for increasing the numbers of U. S. young people so trained.

NSPE for several years has been focusing its attention on the important area of using our available supply of technical brainpower more effectively. It is encouraging to note that current discussions are tending more and more to emphasize this aspect of the scientific manpower problem.

Discussions of this kind, of course, must be prefaced by background information as to the current situation. Such background discussions tend to carry over to predictions for the future where considerable variation is possible. Two principal facts, however, stand out in any such discussion: (1) A look at the population trends of the next several years indicates a potential from our high schools of a considerable number of capable students for collegiate training, not only for science and engineering careers but for other important areas of higher education; (2) Our most pressing problems in education appear to be the provision of adequate facilities and staff to meet these anticipated increasing numbers.

It is natural, therefore, that our most pressing problems of scientific manpower are our *immediate* problems and these certainly include better utilization.

NSPE believes this is an important area in which state societies and local chapters can assist not only the profession, but the users of engineering services in bringing together the most effective procedures so far developed. Conferences for this purpose, of course, have a considerable educational value. Not only is it possible at these meetings to discuss the problems of engineering utilization, but an opportunity is afforded to discuss techniques which are beneficial in the administration of professional personnel. It is, therefore, logical for such conferences to be jointly sponsored by the state societies of professional engineers and one or more colleges of engineering in the state. Such a program was recently developed through the cooperation of the Michigan Society of Professional Engineers and Michigan State University. Discussions ranged from the previously-mentioned background material through specific procedures which had been found successful in improving the utilization of the available engineering manpower.

An observation expressed at this conference is worthy of note. It was pointed out that many conferences on this subject have been held. Too often such conferences have dealt in generalities, viewing with alarm, and the general charge that "something must be done." NSPE believes that conferences of this type to be most effective should endeavor to concentrate on specific successful procedures. Those in attendance should take away with them ideas which with adaptations to their own problems, can be successfully put to work. NSPE recently distributed to its chapters a kit for guidance in developing engineering-management conferences. As has been pointed out in a number of NSPE publications, including the *Criteria of Professional Employment* and the reports of various engineering-industry conferences at NSPE meetings, the areas of utilization encompass many facets of the work of professional engineers.

Conferences and publications, however cannot alone solve the problem. They are merely guides to challenge the thinking of engineers and management in solving their own problems. It is fundamental in NSPE's consideration of all problems that engineers, if given tools to work with, through their own ingenuity can best solve their own problems. With this in mind, it is logical that conferences of this type can best be worked out by state societies and local chapters focusing attention on local conditions which are controlling in the problems faced by companies and engineers of a particular area.

NSPE believes that by working together the management-engineer team can do much to improve the utilization of engineers for the benefit of their employers, the engineers and the profession.—***End.***

Member State Societies' Officers and Directors

Alabama

Pres., W. A. Riggs, 104 St. Francis St., Mobile, Ala.
Exec.-Sec., Francis J. Dupius, 416 Norfolk Lane, Birmingham, Ala.
Sec., W. T. Panayotoff, P. O. Box 346, Mobile, Ala.
Nat. Dir., J. A. McLennan, 605 Warwick Rd., Birmingham, Ala.

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Pres., Walter A. Burg, Rt. 7, Box B5, Tucson, Ariz.
Sec.-Treas., Wm. A. Johnson, Route 1, Box 543, Tempe, Ariz.
Nat. Dir., James O. Martin, c/o Utah Constr. Co., P. O. Box 595, Chandler, Ariz.

Arkansas

Pres., F. M. Methvin, Box 222, Eldorado, Ark.
Sec., Robert F. Oates, 1212 So. Fillmore, Little Rock, Ark.
Nat. Dir., Leonard N. White, Ark Geo. & Conservation Co., 446 State Capitol, Little Rock, Ark.

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Exec.-Sec., J. A. Sontheimer, 1615 Bel Air Ave., San Jose, Calif.
Nat. Dir., George E. Zelhart, 2007 Farris St., Fresno, Calif.

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Pres., Alvin D. Swanson, 1640 Boulder, Denver 11, Colo.
Sec.-Treas., E. Vernon Konkel, 1090 Fox St., Denver 4, Colo.
Nat. Dir., Sam Hawkins, 414—14th St., Denver 2, Colo.

Connecticut

Pres., Theodore Braaten, Butternut Drive, Norwich, Conn.
Exec.-Sec., Llewellyn M. Reed, P. O. Box B., Devon, Conn.
Nat. Dir., P. W. Genovese, 294 Elm St., New Haven, Conn.

Delaware

Pres., James H. Hallett, Jr., E. I. du Pont de Nemours & Co., Engr. Dept., Louviers Bldg., Wilmington, Del.
Sec., Nelson H. Tate, P. O. Box 1848, Wilmington 99, Del.
Nat. Dir., C. H. Evans, Old Hill Road 1, Wilmington, Del.

District of Columbia

Pres., Oscar H. Beasley, 1734 F Street, N.W., Washington, D. C.
Sec., Wm. A. Hepburn, 6006 Conway Rd., Bethesda, Md.
Nat. Dir., Frank L. Martin, 606 Little St., Alexandria, Va.

Florida

Pres., Herbert Gee, 117½ So. Dixie, West Palm Beach, Fla.
Sec., Thomas L. Bransford, P.O. Box 706, Gainesville, Fla.
Nat. Dirs., John E. Kiker, University of Fla., Gainesville, Fla.; Harvey F. Pierce, P. O. Box 726, Riverside Sta., Miami, Fla.

Georgia

Pres., Hugh A. Groves, P. O. Box 5, Harlem, Ga.
Exec.-Sec., John D. Powell, Arch. & Engrs. Inst., Inc., 230 Spring Street, N.W., Atlanta 3, Ga.
Nat. Dirs., F. E. de Gollan, Jr., P. O. Box 973, Atlanta, Ga.; Arley R. Walker, 1299 Northside Drive, N.W., Atlanta, Ga.

Idaho

Pres., E. C. Reynolds, Jr., 618 Idaho Bldg., Boise, Idaho.
Sec., Walter H. Smith, P. O. Box 548, Boise, Idaho.
Nat. Dir., W. P. Eaton, 1704 Harrison Blvd., Boise, Idaho.

Illinois

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Freund

(*Continued from page* 25)

I PROPOSE to you what I consider to be a valid principle, i.e., that the strong men in any organization or any institution must not only instruct their followers but, in particular, must inspire them. Hence, I argue that the leaders in the engineering profession are responsible for the morale of engineers. And I contend that the morale of engineers must include motivation for ethical conduct.

If the leaders of our profession can accomplish this, if they can successfully motivate engineers always to be ethical in their conduct, the state boards can go ahead and register any engineer who can pass the examination. The state boards won't need to worry too much about their integrity.

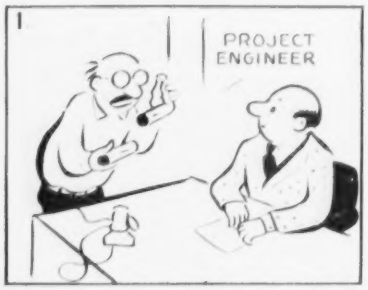
Vannevar Bush had honor and integrity in mind when he gave his famous address before the American Engineering Council in 1939. He told them:

> **I would preach the doctrine . . . that the path of professional attainment lies open . . . that it is a thorny path that is easily lost sight of among the rocks and rubbish, that it can be adhered to only by sacrifice and that it is a long path which leads at last to the heights. To the heights of true professional attainment, where honor and individual recognition by fellows is the real reward, and where the watchword is that old, old theme which has never lost its power, and which may yet save a sorry world, simple ministration to the people.**

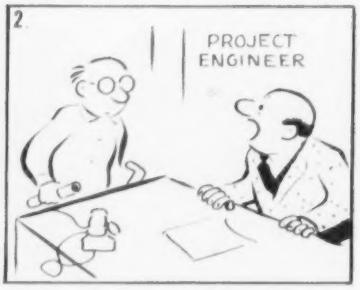
I submit to you that a scoundrel just can't minister to the people.—***End.***

The Red, Red Tape

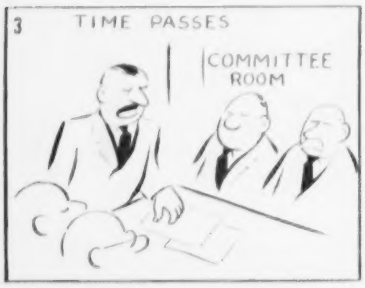
by Hoppes



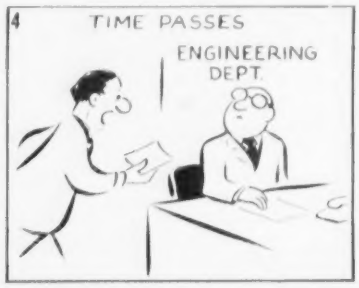
"My department would like to have these parts welded together to use in a test."



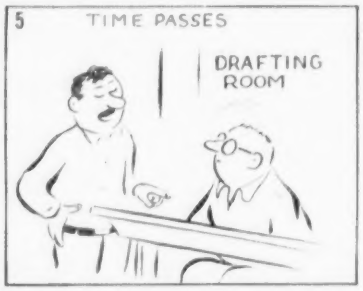
"Very well, Mr. Hoskin. But first we'll need a written justification for the job."



"The Hoskin's project requires a rewrite of the original justification for a request on the drafting room!"

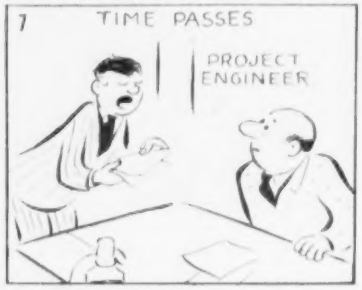


"We agree then, gentlemen, to approve the necessary expenditure for the Hoskin's job?"



"You are authorized to produce a drawing of an estimate of material and labor for the Hoskin's project."

"Will you write up specifications and requests for bids on the Hoskin's project?"



"I have here an okay for Mr. Hoskin to produce as per his request."

"Mr. Hoskin? Why Mr. Hoskin retired from the company several months ago!"

With Our Members . . .

Topic: "Today's Professional Engineer"

Rhinehart Speech Highlights 49th Annual Meeting of Kansas Engineering Society

A speech by NSPE President Robert J. Rhinehart highlighted the forty-ninth annual meeting of the Kansas Engineering Society. His talk on "Today's Professional Engineer" was enjoyed by members, their wives, and guests of the Society.

Retiring KES President Meloy Quinn of Clay Center presided at the business sessions. Committee reports were presented and the Society passed a resolution expressing opposition to the U. S. Bureau of Public Roads' recommended clause in state highway construction contracts that forbids a consulting engineering firm to engage any professional or technical personnel who are or have been, during the period of the contract, employees of the Bureau or of state, county, or city highway departments.

Other speeches presented during the meeting were: "Water Resources of Kansas" by C. Y. Thomas, vice president of Spencer Chemical Company and chairman of the Kansas State Water Resources Board; "Recruiting Engineers for Industry" by Robert F. McCoole, Monsanto Chemical Company and William H. Posladek, Spencer Chemical Company; "Electronic Computers and Their Use in Engineering" by David D. Breedon of the Westinghouse Electric Corporation.

The Kansas Engineering Society has now reached the mark where it is entitled to two national directors. Mr. C. H. Scholer of Kansas State College, Manhattan, Kansas, was elected by the Board of Directors to serve with William F. Ryan as national director.

The officers for the Society for 1957 are as follows: President—Leon A. Sherwood, vice president of the A. G. Sherwood Construction Company, Independence, Kansas; Vice President—V. L. Pierce, production manager of the Kansas City Structural Steel Company, Kansas City, Kansas; secretary-treasurer—Guy E. Gibson, Jr., engineer, State Division of Water Resources, Topeka.

. . . More state society news on pages 37 and 39.

Clip out and Mail Reservation Coupon to Annual Meeting on Page 21

Pennsylvania Chapter Tours Company Plant

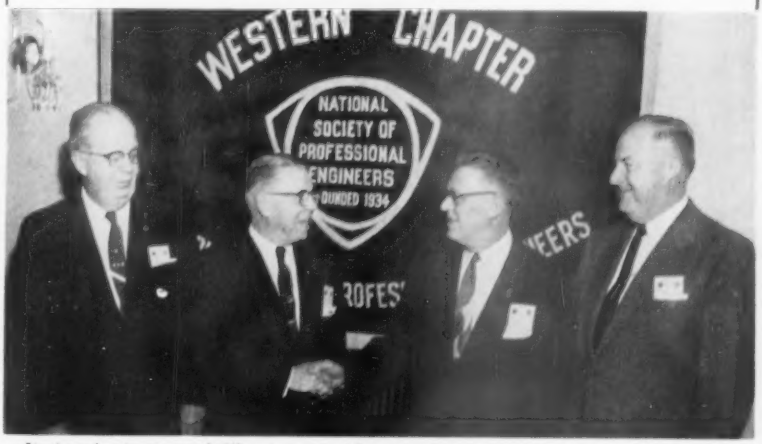
Members of the Valley Forge Chapter, Pennsylvania SPE, held their April meeting at the Leeds & Northrup Company plant, North Wales, Pa. Dinner was served in the company cafeteria.

Afterwards a short talk was given by Elwood Rogge, plant superintendent, who described the plant and its facilities. Upon completion of the talk the group was taken on a conducted tour through the company.

New York Ladies Committee

Shown is the ladies program committee for the annual meeting of the New York State SPE, May 16-18. They are, standing, l. to r.: Mrs. Walter Gress, Mrs. David Gordon, Mrs. John B. Walsh, Mrs. Jesse Rood, Mrs. George Wilson, and Mrs. Edward B. Fitzpatrick. Seated, l. to r.: Mrs. Fred Caiola, Mrs. John E. Lane, Mrs. John J. Lanigan, Mrs. Otto Mald, and Mrs. Leslie Wax.

Greeting Guest Speaker



National, State, and Chapter presidents greet Dean Curtis L. Wilson of the Missouri School of Mines and Metallurgy, who was the guest speaker at the annual ladies night meeting of the Western Chapter, Missouri SPE. Shown are, l. to r.: A. C. Kirkwood, MSPE president; Dean Wilson; H. B. Atherton, chapter president, and G. H. Dyer, NSPE vice president.

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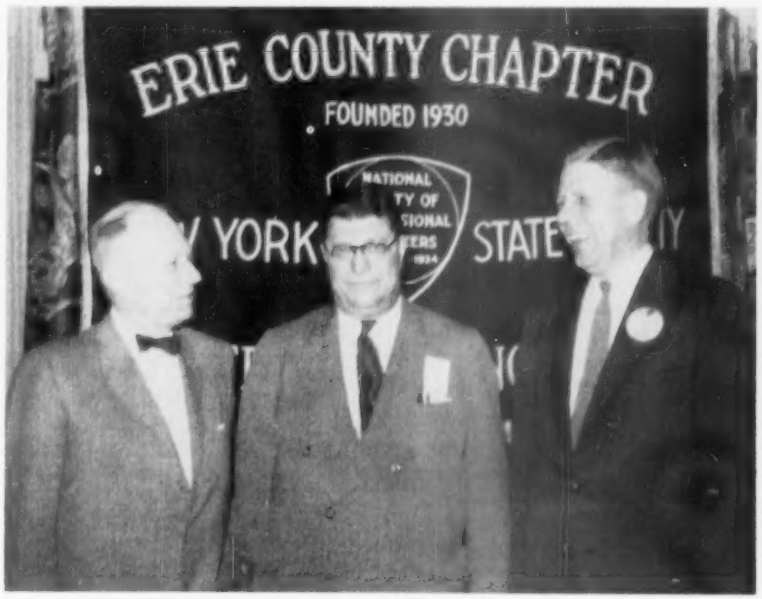
Leigh St. John Speaks To Erie County Chapter

Leigh St. John, NSPE national director and second vice president of the New York State Society, addressed a recent meeting of the Erie County Chapter, NYSSPE, on society problems with highlights from the Board of Directors spring meeting in Charleston, South Carolina.

The interesting talk by Mr. St. John sparked what proved to be a lively general discussion on such topics as "unionization of engineers." It was brought out that unions have been sponsoring a concerted effort to propagandize the engineer not only in industry, but also in colleges—especially in the West.

It was pointed out that one practical step that can and is being taken to counteract the union's move is the distribution of such literature as a booklet entitled *Criteria for Professional Employment of Engineers*, which may be obtained from the National Society. The publication deals with the engineer's responsibility to management and management's responsibility to the engineer.

Another item of interest raised at the meeting was the fact that professional engineers in private practice strongly feel that the engineering laws should be more rigidly enforced to stop practices of fee cutting and illegal use of the engineer's seal.



Leigh St. John, center, was guest speaker at a recent dinner meeting of the Erie County Chapter of the New York State SPE. On his left is C. Arnold Dutton, NSPE national director, and on the right is Earl A. Schilt, chapter president.

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Restricted to Registered Professional Engineers . . . Directory Continued on Next Page

Lebanon County Chapter Makes Mine Inspection

The Lebanon County Chapter of Pennsylvania recently had the unusual experience of being taken on a guided tour of the No. 4 Mine of the Bethlehem Mines Corporation at Cornwall, Pa. This mine is unusual in many respects in that it has been in almost continual operation for over 200 years; the ore fractures in such a way that very little has to be done to break it up; the mining is done by the "blockade" method in which the ore is undercut and falls into funnel shaped openings by gravity, and the ore contains considerable amounts of copper, cobalt, sulphur and a small amount of gold.

Robert G. Peets, mining engineer and past president of the Chapter was host and was ably assisted by a number of the engineering staff of the Bethlehem Mines Corporation (a subsidiary of Bethlehem Steel Co.). After the trip the company served a buffet lunch to the group. Guests included Robert Mayo of the Lincoln Chapter and State Secretary John T. West, Jr.

Installation of the Executive Committee of the Ohio SPE was held during Ohio's recent annual meeting. They are, l. to r.: Homer T. Borton, vice president; Earl L. Hineline, treasurer; Frank M. Williams, vice president; Elmer S. Barrett, president; H. Bruce Baty, vice president, and Donald E. Kropp, secretary.

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STRICTLY BUSINESS

Personalities . . . **A. Marriott Walker** has been named chief mechanical engineer of **John G. Hoad & Associates, Inc.,** according to an announcement by **John G. Hoad,** president of the Ypsilanti, Mich., consulting engineering firm. . . . **Andrew H. Bergeson,** vice president in charge of engineering at **Stromberg-Carlson,** a division of **General Dynamics Corporation** has moved to Washington, D. C., where he will serve as vice president in charge of the firm's capital city office, it has been announced by **Robert C. Tait,** president of **Stromberg-Carlson.** . . . **Andrew A. Kucher,** director of **Ford Motor Company's** scientific laboratory, has been appointed director of the engineering staff. . . . **Specialties, Inc.,** has announced the promotion of **Louis Bucalo** to assistant chief engineer. . . . **Stoddard H. Martin** has been elected vice president and secretary and director of the **David M. Hunt Construction Company,** Philadelphia, Pa. . . . **The Deming Company,** Salem, Ohio, announces the appointment of **Glenn L. Davis** as chief engineer. The firm also announced the promotion of **Eugene T. Brooks** to assistant chief engineer and **Louis C. Ospeck** to chief design engineer.

Mr. Walker

The appointment of **Wendell H. Neeley** as a project engineer for Panellit Division of **Panellit, Inc.,** Skokie, Ill., has been announced by **M. V. Lorig,** vice president. . . . **Paul H. McCormack** has been placed in charge of application engineering for the Structural Products Division, **National Starch Products Inc.,** New York, N. Y. . . . **Fischer & Porter,** Hatboro, Pa., announces the appointment of **Alexander Greenfield** as director of research, development and engineering. . . . **Gordon Thompson,** chief engineer of **Electrical Testing Laboratories, Inc.,** New York, N. Y., has been elected vice president of the firm. . . . **Al Minetti,** vice president of the **Harron, Rickard & McCone Company,** San Francisco, Calif., has been appointed as a consultant to the Metalworking Equipment Division of the **Business and Defense Services Administration,** U. S. Department of Commerce. . . . The appointment of **Russell F. Sanders** as director of engineering and sales at the Rochester, N. Y., Products Division of **General Motors** has been announced by **Wallace E. Wilson,** general manager. . . . **The National Supply Company** announces the appointment of three staff engineers to the Manufacturing Department of its general headquarters in Pittsburgh, Pa. They are **Henry Seidel, Frank Sanford,** and **Andrew Hlivka.**

Mr. Greenfield

The addition of **Vytautas P. Puzinauskas,** chemical engineer, to the headquarters research staff of **The Asphalt Institute,** College Park, Md., has been announced by **J. E. Buchanan,** Institute president. . . . **Blaw-Knox Company,** Pittsburgh, Pa., announces the appointment of **Bruce Alexander** as manager of technical services at its office in Washington, D. C. . . . **Wesley Timmcke** has been named manager of engineering of the Industrial Division of the **Warner Electric Brake & Clutch Company,** Beloit, Wis. . . . **Julian Silberberg** has been promoted to senior welding engineer at the **Maytag Company,** Newton, Iowa. . . . **John T. Pope** has been named chief staff engineer of **Seiberling Rubber Company,** Akron, Ohio, it has been announced by **E. P. Schrank,** manager of engineering. . . . **Ralph Birchard** has joined the engineering staff of **Radar and Associates, Engineers and Architects,** Miami, Fla. . . . **Charles A. Nuebling** has been appointed manager of engineering of the Electronics Division of **Fairchild Controls Corporation,** subsidiary of **Fairchild Camera and Instrument Corporation.** . . . **Charles Cook, Jr.,** has been named engineering director for the **Clark Equipment Company,** and will be responsible for engineering and production liaison with **Clark** oversea licensees on behalf of all the company's products.

Mr. Pope

Merger . . . Two of Texas' well-known consulting engineering firms have merged. **H. E. Bovay, Jr., Consulting Engineers,** and **Reg F. Taylor, Consulting Engineer,** have joined their organizations with the **Bovay** firm name to be retained.

New Associates . . . The firm of **Seelye Stevenson Value & Knecht,** New York, N. Y., announces the appointment of the following engineers as associates: **William D. Bailey,** civil engineering division; **Frohman P. Davis, Ira M. Hooper, Frederick J. Kircher, Philip P. Page,** and **Wayman C. Wing,** structural engineering division; **William T. Cleland, Jack N. Keck,** and **Alexander Michelson, Jr.,** mechanical & electrical engineering division. All of these men have been with the firm for many years. . . . **Fred N. Severud, Eivind G. Elstad,** and **Max Krueger** have announced the following new associates in their firm: **Peter J. Lindstrom, Werner Gottschalk, Val Buergin, Alfred J. Perrone, B.Brurock Harstead, Thornton C. Kline, Karl B. Ideman, Vincent R. Cartelli, V. A. Busch, Walter F. Conlin, Jr., Michael Alexander, Edward J. Meagher, Fred Fischer, Jr.,** and **John A. Zoldos.** The name of the New York firm has been changed to **Severud-Elstad-Krueger-Associates.**

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Legal

(Continued from page 31)

sional engineers to practice through a corporation provided the person in responsible charge of the activities of the corporation which constitute such practice is a professional engineer who has authority to bind the corporation by contract. Any design, plans, drawings or reports, which are involved in such corporate practice, must bear the seal and signature of the professional engineer directly responsible for the work for which the plans were drawn.

The new law provides for tighter registration requirements in that, in addition to the former requirements of graduation from an approved four year engineering course plus four years of experience, the applicant now must pass two examinations as prescribed by the Board. The first is the Engineer - in - Training examination, while the second tests professional practice competence. The requirements for those applicants who are not graduates of an approved engineering course have been raised from eight years of active practice in engineering work to ten years.

A further amendment now permits the suspension as well as the revocation of a registration certificate for the practice of any fraud or deceit in obtaining a certificate, or for any gross negligence or incompetence in the practice of professional engineering.

A section which is new to the New Mexico Registration Act declares that the practice of engineering in violation of the provisions of the Act shall be deemed a nuisance, and may be restrained by injunction in an action brought in the name of the people by the attorney general or district attorney of the proper district.

Detroit Chapter Produces Film

A 20-second film for use on TV spot announcement time has been produced by the Detroit Chapter of the Michigan SPE.

The film, made with animation and background narration, is designed to call attention to the need for high school students to have a good foundation in mathematics.

The Detroit Chapter is making the film available to other NSPE groups at a cost of $25 for the first print, and $15 for each additional print.

Orders for the film should be sent to Television Committee, Detroit Chapter MSPE, 100 Farnsworth Avenue, Detroit 2, Michigan.

Postscripts

(*Continued from page* 31)

ance and speak in your behalf. A few unorganized notes reproduced by the most inexpensive methods on an inferior grade of paper will net you corresponding results—unless you are just plain lucky. You may resent the current methods for job seeking, but until something better has been instituted, you will find it profitable to conform.

Your resume and letters should be drafted to provide exact information in short form business English. Spacing and the amount of material on each page should follow the rules for standard business correspondence. Provide sufficient paragraphing and marginal space to lend an uncrowded appearance. Help the reviewer, since you want him to read your resume. Never submit letters or resumes in longhand unless it is specifically requested.

Resumes and cover letters should be reproduced by a precise offset method; in standard typeface; and on good quality rag bond paper. The quality should conform to that used by a substantial business firm. Your "Quality" should equal that of the companies you are approaching and the position you seek in those firms.

You are always careful about your personal appearance before reporting for an interview. Your letter and resume arrive before you. Be sure that they represent you as a man that an employer would like to interview.

Currently, this is a controversial issue in resume preparation. Personnel interviewers and others required to review quantities of resumes for low and medium level personnel are inclined to recommend that resumes be confined to one page. Since this employment group comprises a majority the rule can be adopted for those in the lower brackets of the clerical and administrative fields. It can not be accepted as a blanket instruction. In all other instances sound judgment must apply. This is especially true in the management, technical, sales and at other responsible occupational levels.

A resume of employment and personal history must contain concise answers to the job specifications of an employer before it is of sufficient interest to result in an interview. The length of your resume will depend upon your ability to comply with this requirement. Your resume should be printed on standard (8½" x 11") paper and conform to rules for acceptable busines correspondence. Specifically, a page without sufficient margins and paragraphing indicates that you are not familiar with the rules of neat correspondence; the page is unsightly and difficult to read. It is usually not read carefully, if at all.

—PP—

Out of the mailbag comes an inspiring communication which we think is worthy of being reprinted here. It's called an "Engineer's Prayer," and we understand that it has been used at several recent engineering meetings across the country. Here it is then.

—PP—

TEACH ME, *as a Professional Engineer, to constantly search for the Truth and to direct my best Judgment toward the building of worthy goals.* INSPIRE ME *to broaden and deepen my knowledge. Help me to grow in wisdom so I can apply it with a growing understanding of spiritual, social and cultural values.*

ENCOURAGE ME *to be sincere, understanding and cooperative in all my relationships—so that I can best promote the dignity and well-being of mankind.*

KEEP ME *humble, anxious and strong in my purpose to contribute fully in working out the highest destiny of my profession.*

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L. A. Munther
P. O. Box 535
Idaho Falls, Idaho

NEW Processes . . .

Exceptional Resistance In Protective Coating

"Maintz" is a new coating which provides protection against severe chemical and weather exposure. It is based on du Pont's chlorosulfonated polyethylene which, in combination with silicone and other resins, produces a coating which is exceptionally tough and long lasting.

Distributed by the West Chester Chemical Co., of West Chester, Pa., "Maintz" does not dry to a hard and brittle finish as does ordinary paint, but forms a tough, resilient coating which has exceptional resistance to abrasion, weathering, and chemical corrosion.

Water-Level Deck Drain Announced By Boosey

A newly perfected drainage system which brings the water level of swimming pools nearer deck level, cuts operating costs and is more sanitary, has been announced by Norman Boosey Manufacturing Co., Detroit Mich., and Racine, Wis.

Called the Boosey water-level deck drain, the system features a drainage trench completely surrounding the pool and set back from the edge. The trench is covered with an eye-appealing, slip-resistant grille with apertures small enough to prevent snagging and injury to the toes.

Overflow gutters are eliminated and waste is washed over into the trench. Drains at the bottom of the trench direct this water through filters and back into the circulating system, with the dual results that sanitation is increased and operating costs are reduced.

The water level is regulated and controlled through use of adjustable Weir plates set in short trenches at the vertical face of the pool.

By maintaining the pool's water line near the level of the pool deck, the Boosey drain may eliminate use of ladders and steps. A person, whether expert swimmer or "splasher," can easily just "roll out of the pool," Boosey engineers say.

The Boosey drain is available in three types. A free catalog describing the system can be obtained from the company's general sales office, 5231 Avery Ave., Detroit 8, Mich.

General Electric Co. Develops Tough Plastic Material to Replace Metals

The discovery and initial development of a new plastic material tough enough to replace metals in many applications has been announced by General Electric Company.

Parts made from the new compound, LEXAN polycarbonate resin, are reportedly strong enough to withstand the blows of a carpenter's hammer. General Electric expects LEXAN molding compound to replace cast metals, ceramics and other plastics in some applications.

"LEXAN resin offers an unusual combination of toughness, impact strength, heat resistance and dimensional stability. These properties make it promising for applications not previously handled by conventional thermo-plastic materials," according to Dr. A. E. Schubert, manager of the Company's Chemical Development Department.

LEXAN resin is now being made in small lots at the Company's applied research laboratory at Pittsfield, Mass., and all available material is going into the Company's testing program. The polymer is being evaluated in the form of molding compound, extrusion compound, film, varnish and coatings.

"Favorable results from some or all of these evaluations, coupled with our current process studies, will provide the Company with the information it needs to make a decision on supplying the market with commercial quantities," Dr. Schubert said.

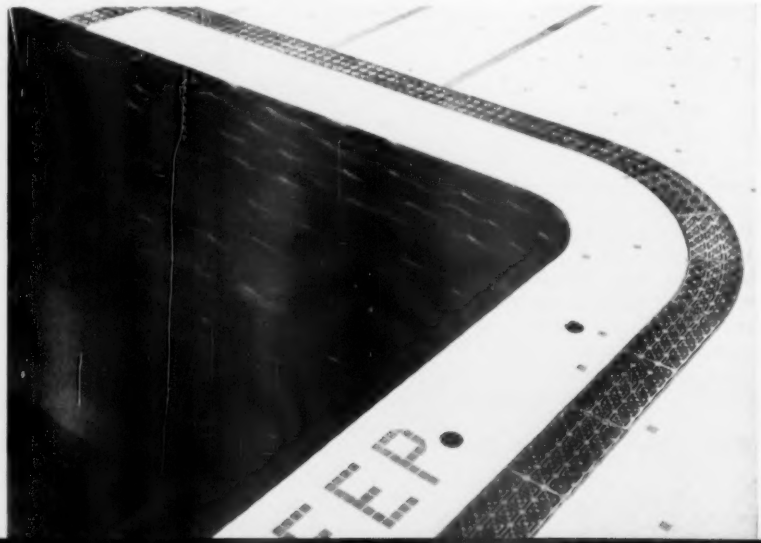
Until the present evaluations have been completed and pilot plant production established, samples will not be available for general distribution, the announcement emphasized.

Early studies indicate that LEXAN resin can be made in a variety of transparent or opaque colors, with parts showing good surface hardness and gloss. Properties of the polymer suggest its use in such applications as coil forms, decorative and functional appliance parts, gears, automotive parts, housings, structural parts, handles, drawer rollers, electronic components, and telephone accessories.

The excellent electrical characteristics, high thermal stability, low water absorption, and high tensile strength of LEXAN film make it suitable for use as an electrical insulating material.

Significantly, the original polycarbonate chemistry on which LEXAN polymer is based grew out of General Electric's continuing research efforts directed at new, improved insulating materials. The affinity between electrical and chemical research has been demonstrated in many previous General Electric discoveries in the chemical field.

The water-level deck drain, newly perfected by the Norman Boosey Manufacturing Co., brings the water level of swimming pools nearer deck level, cuts operating costs and is more sanitary.

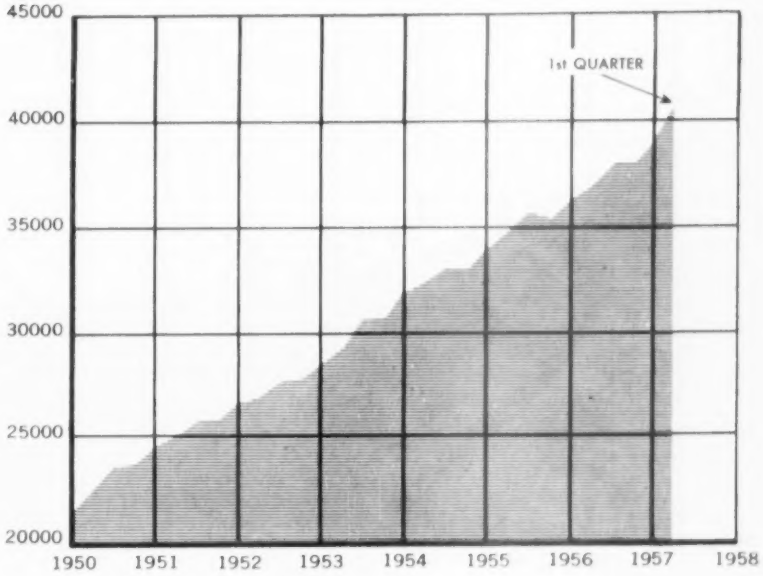


Unity Discussion Held At St. Louis Meeting

Unity was the subject under discussion at a recent joint meeting of the St. Louis Chapter of the Missouri SPE and the St. Louis Section of the American Institute of Electrical Engineers. The meeting stemmed from resolutions passed by the two groups in November, 1954, which called for a joint unity committee to explore and promote unity at the grass roots level.

The meeting took the form of a panel discussion followed by a period devoted to group dynamics. Panel moderator was W. J. Roa, Jr., chairman and AIEE representative on the St. Louis Unity Committee. A. C. Kirkwood, president of the Missouri SPE, presented an MSPE member's views on professional unity. Presenting an AIEE member's views on unity was Prof. Norman F. Rode of Texas A&M College and national vice president of AIEE. C. W. Schemm, an active officer in both AIEE and MSPE groups in St. Louis, spoke on the trends and importance of registration. Howard Honefenger, president-elect of MSPE and an NSPE national director as well as co-chairman of the St. Louis Unity Committee, discussed the prestige and economic status of engineers.

NSPE Membership Passes the 40,000 Mark!



Intertwined with the benefits of unity were discussions on the need for universal registration and the recognition of registration as a definition of the professional status of the individual. The improved prestige and economic status which could be gained by a unified profession was discussed.

A similar meeting is planned for no later than fall of this year.

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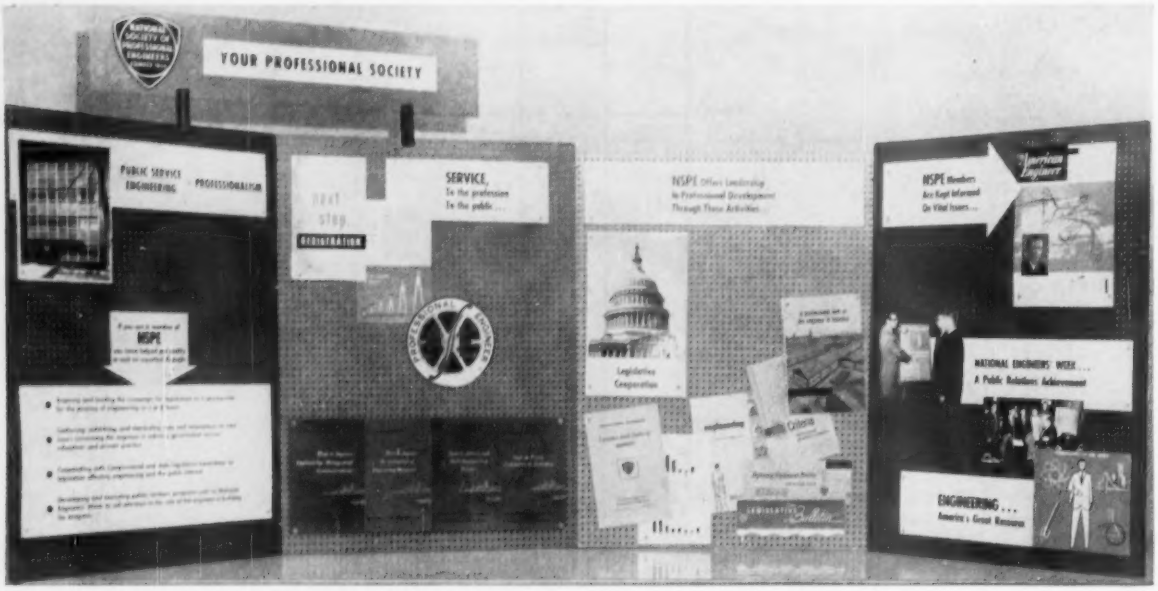
New Portable NSPE Display Available



A new portable display for all NSPE affiliates is now available from the National Society headquarters in Washington. The new unit is made up of four peg board panels, a top sign carrying the NSPE emblem, and a fiber shipping case. All the illustrative material is permanently mounted on the panels. The unit is designed to make up a graphic exhibit of the major areas of NSPE activities and objectives. It is ideal for use at annual meetings and conventions, membership meetings, and other events where it is desirable to have an illustrated presentation of the advantages of NSPE membership. Reservations for the display should be made well in advance. It may be obtained by writing to the National Society headquarters, 2029 K Street, N.W., Washington 6, D. C.

NSPE Committee Heads

Education and Professional Development Group

Engineering Preparation — Anatole R. Gruehr, P.E., 85 Livingston Street, Brooklyn 1, N. Y.

Education — Robert B. Rice, P.E., P. O. Box 5131, Raleigh, N. C.

Registration—R. G. Warner, P.E., c/o United Illuminating Co., 80 Temple St., New Haven, Conn.

Young Engineers—Leland Hobson, P.E., Kansas State College, Manhattan, Kans.

Public Relations Group

Awards—L. L. Dresser, P.E., Box 2518, Tulsa, Okla.

National Affairs — M. F. Wooten, P.E., 215 Latta Arcade, Charlotte, N. C.

National Defense — L. M. Dunn, P.E., 5690 Lake Shore Road, Port Huron, Mich.

Public Relations—Paul Harlamert, P.E., 24321 East Oakland Drive, Bay Village, Ohio.

Engineers' Week — John L. Bahr, P.E., Boot Road, Rt. 1, West Chester, Pa.

Interprofessional Relations Group

Interprofessional Relations—W. F. Mochlman, P.E., 923 Cooper St., Knoxville, Tenn.

Inter-Society Relations—Morris D. Hooven, P.E., 80 Park Place, Newark, N. J.

Liaison with EJC—A. C. Neff, P.E., P. O. Box 170, Middletown, Ohio.

ECPD-NSPE Relations — R. L. Sweigert, P.E., Georgia Institute of Technology, Atlanta, Ga.

Professional Practice Group

Employment Practices—G. H. Dyer, P.E., c/o Missouri Water Company, 123 W. Kansas St., Independence, Mo.

Engineers in Education Sub-Committee—A. J. Del Mastro, P.E., Rt. 19, Cleremont Avenue, Nixon, N. J.

Engineers in Government—Leonard N. White, P.E., Ark., Geological & Conservation Commission, State Capitol Bldg., Little Rock, Ark.

Engineers in Industry—Wayne Ault, P.E., 481 Annawan Lane, Youngstown, Ohio.

Engineers in Employ of Private Practitioners—Linas Brown, P.E., 777 Foxdale Ave., Winnetka, Ill.

Engineering Practices — Leslie C. Gates, P.E., P. O. Box 672, Beckley, W. Va.

Ethical Practices—Ezra B. Nicholson, P.E., 1121 Banberry St., Bryn Mawr, Pa.

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Publications — Vincent F. Waters, P.E., 75 Third St., N.W., Atlanta, Ga.

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Legislative—Robert F. Miller, P.E., 405 N. Lehigh St., Tamaqua, Pa.

Nominating — Clarence T. Shoch, P.E., 901 Hamilton St., Allentown, Pa.

Resolutions — C. Arnold Dutton, P.E., 75 W. Mohawk St., Buffalo, N. Y.

Committee Structure Study—Clarence T. Shoch, P.E., 901 Hamilton St., Allentown, Pa.

History—D. B. Steinman, P.E., 117 Liberty Street, New York 4, N. Y.

...NEW LITERATURE...

To help the offering firms determine which literature you require, when requesting an item, be sure to list all specifications shown . . . and say you saw it in the AMERICAN ENGINEER.

HIGH TEMPERATURE ALLOYS—The engineering properties and fabrication characteristics of ten high-strength alloys for elevated temperature service are described in detail in a new 20-page booklet issued by The Carpenter Steel Co., 3501 West Bern St., Reading, Pa. The technical information includes physical constants, mechanical properties at room and elevated temperatures, heat treatment, forging, cold working, welding and corrosion resistance. Recommended uses are spelled out for each alloy with a comprehensive discussion of how to use stress-rupture and creep data in designing components for high temperature service. The effect of steel making practice on forgeability, cold working properties and service behavior is also described.

—AE—

ENGINEERING INSTRUMENTS—The first completely revised catalog of engineering instruments in fifteen years has been published by W. & L. E. Gurley, 112-year-old manufacturer of engineering and surveying instruments. The Gurley engineering instruments catalog has been published since 1855. A number of new explanatory tables are a feature of the 72-page book, which has been printed in two-colors. The tables make it possible to locate detailed information at a glance. Among the sections in Bulletin 50 are: Transits, Levels, Leveling and Stadia Rods, Topographic Instruments and Equipment, Compasses, Field Supplies, Current Meters, Water Level Recorders, Repair Service and an outline of other Gurley publications. The new Bulletin 50 is available to practicing engineers, surveyors and students of engineering upon request. Write: W. & L. E. Gurley, Troy, N. Y.

—AE—

TAPE CONTROL—The principles and mode of operation of the Digimatic tape control system for machine tools are described in a new 12-page booklet published by Electronic Control Systems, Inc. Digimatic is a system for the numerical control of machine tools through the medium of magnetic tape. It comprises a planning desk, a high-speed special purpose computer, and a machine control unit. The new booklet describes and illustrates the techniques for preparing and checking data, entering the data into the planning desk, and operating the machine control unit. It also tells how small manufacturers can contract for the preparation of Digimatic control tapes through the service offered by Electronic Control Systems, Inc. Copies of the booklet will be sent without charge to interested manufacturers, upon request to Manager, Applications Engineering, Electronic Control Systems, Inc., 2136 Westwood Blvd., Los Angeles 25, Calif.

CORROSION—Available upon request from the How E. Baker Co., 4248 Whiteside St., Los Angeles 63, Calif. is a revealing technical paper on the corrosion of iron in water, with a descriptive technique on how to inhibit the corrosion of hot water tanks and other metal tank usage. The paper also includes a tank capacity measuring table and other data which should be helpful to the maintenance man, engineer, architect, armed forces, procurement man and all others beset by the problem of fighting corrosion in hot water tanks.

—AE—

DOOR GUIDE—A new 16-page catalog presents the Barcol OVERdoors line of residential, commercial, and industrial overhead doors. The book gives full information on new Weather-King flush sections, combining high-insulation-value sandwich construction with guaranteed weatherproof facing. Weather-King panel doors, electric operators, radio controls, special controls, and WARDROBE doors are fully described and extensively illustrated. Specifications and instructions for preparing building openings and installation of various models are given with detailed drawings. Solutions to special installation problems are given. For free copy, write Barber-Colman Co., Dept. 5A, Rockford, Ill.

—AE—

FLOODLIGHTING—An illustrated catalog issued by Stonco Electric Products Company, Kenilworth, N. J., condenses their entire cast aluminum floodlighting line into 48 pages. Twelve pages are taken up with cast aluminum, vaportight pendant, ceiling and wall fixtures, eight pages with wiring troughs, splice boxes and other outdoor fittings, and 17 pages with the tubular sealed-beam floodlighting lampholders. Complete lighting performance tables are included for the new high efficiency long-throw PAR-46, PAR-56 and PAR-64 500 watt power-beam projector lamps in narrow spot, medium and wide floods. A complete new "Homelight" line for garden and residential use including portable spike lights, wall lights, and clamp lights, has been included. Catalog 156 with the consolidated price line brought up to date can be had by writing the manufacturer.

—AE—

SIGNS—The Grote Manufacturing Company, Inc., of Bellevue, Ky., announce the release of their new catalog on "Signs and Markings For Construction and Maintenance." Included in this catalog are the many directional symbols, advance warnings, approach warnings (road construction work), guide signs, regulatory signs, stop signs, barricade strips, and delineator strips. Color of the message and the border on all Grote signs adheres to standards of "Manual on Uniform Traffic Control Devices for Streets and Highways."

STEEL FABRICATING — McGregor-Michigan Corp., 116-year-old steel plate fabricating firm, has just published a new 12-page brochure. The two-color booklet describes and illustrates equipment fabricated recently, broken down into fabrications for steel mills, such as buckets, water cooled doors and frames, hooks, etc.; for chemical and petroleum processing plants, heat exchangers, column, jacketed stainless steel tanks and kettles, etc.; for miscellaneous industrial use, engine beds, machine bases, furnace casing, foundry cupola shells, construction equipment, etc. Write to Robert C. Hilprecht, Sales Manager for brochure at 5800 Rivard Street, Detroit 11, Mich.

—AE—

HIGHWAY PRODUCTS—A new twenty-page brochure giving comprehensive information on the complete line of Kaiser Aluminum highway products is now available from Kaiser Aluminum & Chemical Sales, Inc., The booklet entitled, "Kaiser Aluminum Highway Products," gives detailed design, construction and installation data for bridge railings, extruded highway signs, sign blanks and accessories, which are available from Kaiser Aluminum. Photographs, scale drawings, and handy tables giving data on dimensions, alloys, and weights facilitate use of the brochure. The booklet may be obtained free from Kaiser Aluminum & Chemical Sales, Inc., Highway Products Sales Office, 919 North Michigan Avenue, Chicago 11, Ill.

—AE—

TOOLING EQUIPMENT—A new illustrated catalog that lists the nation's most complete line of Optical Tooling equipment has just been issued by Keuffel & Esser Co., Hoboken, N. J. The catalog lists such standard items as jig transits, alignment telescopes, and PARAGON Tilting Levels, together with a large number of accessories, instrument stands, fixtures, collimators, scales, targets, and optical attachments, including the optical square.

—AE—

ALUMINUM BROCHURE—A convenient guide to engineers in determining the corrosion resistance of aluminum has been published by Reynolds Metals Co. Titled "Corrosion Keys for Aluminum," the attractive brochure is intended primarily as an aid to engineers designing aluminum into process plants or equipment, although it will be of interest to those concerned with other applications of the metal. Copies of the brochure can be obtained by writing: Reynolds Metals Company, 2500 S. Third St., Louisville, Ky.

These listings are informational only and are not an endorsement of the products, nor of the manufacturer's claims.

Maryland

(Continued from page 14)

"bargain basement" when AMERICAN ENGINEER went to press. English and speech were the major choices of the university seniors when asked to pick an important non-technical subject.

William Brzozwski, of Baltimore, Md., plans to work for Rummel, Klepper & Kahl, Consulting Engineers, of Baltimore, mainly because "the firm is small and growing . . . and being a small firm I will be able to participate in a variety of projects." A civil engineer, he also voiced this apt comment: "It seems that only the large firms send recruiters. This eliminates most of the consulting engineering firms. Many of my fellow students expressed an interest in consultants, however, to my knowledge, only one consultant sent a representative to the campus. I feel that the small firm should be encouraged to send representatives."

Only time will tell what the future holds in store for these University of Maryland seniors as they prepare to embark upon an engineering career. But if ambition and desire can be classified as accurate gauges to success, these youths will reach the top—despite all the hullabaloo over recruitment.—***End.***

Meeting

(Continued from page 21)

2:30 p.m.— 4:30 p.m.	Professional Meeting and Visit Exhibits
5:00 p.m.	Leave by air-conditioned buses for Ranch Style Party at Ridglea Country Club, Ft. Worth
6:30 p.m.—Midnight	Ranch Style Party at Ridgea Country Club, Ft. Worth
Friday, June 7, 1957	
8:30 a.m.— 9:30 a.m.	Visit Exhibits
9:00 a.m.— 5:00 p.m.	Registration Desk Open
9:30 a.m.—12 noon	Functional Sections Conferences
12:30 p.m.— 2:00 p.m.	Luncheon Address by J. Eric Jonnson, President, Texas Instrument Co.—"The Young Engineer"
2:30 p.m.— 4:00 p.m.	Functional Sections Conferences (continuation) Visit Exhibits
4:00 p.m.— 5:00 p.m.	Results of latest reesarch report of the Professional Engineers Conference Board for Industry—"Motivations of Engineers" Presented by Hugh Rusch, Vice President, Opinion Research Corp., Princeton, N. J.
5:00 p.m.	Free Evening
Saturday, June 8, 1957	
9:00 a.m.—12 noon	Registration Desk Open
9:00 a.m.—10:00 a.m.	Visit Exhibits
10:00 a.m.—12 noon	Professional Meeting Continues
12:30 p.m.— 2:00 p.m.	Annual State Awards Luncheon, with Ladies, Speaker: Congressman Bruce Alger of Texas
2:00 p.m.— 5:00 p.m.	Visit Exhibits
2:00 p.m.— 5:00 p.m.	Professional Meeting Continues
6:00 p.m.— 7:00 p.m.	Reception and Cocktail Party at the Engineers Club of Dallas
7:00 p.m.—Midnight	Annual Dinner and Dance, and Presentation of 1957 NSPE Award to Granville M. Read, and Installation of new NSPE officers

SPEAKERS FOR PANELS AT DALLAS

Theme: *The Professional Development of Young Engineers*

IN INDUSTRY

Moderator:
Wayne Ault, Chairman
Engineers in Industry Subcommittee

Panelists:

Winston Oberg
Employee Relations Dept.,
Esso Research & Engineering Co.
Linden, N. J.
"Guiding the Young Engineer Toward His Greatest Potential"

T. M. Medland, Executive Director,
Association of Professional Engineers of the Province of Ontario
Toronto, Ontario, Canada
"Solving the Problems of Young Engineers Through a Professional Approach"

Frank H. Hurley, Manager
Management Education & College Relations
American Cyanamid Company
New York 20, N. Y.
"Professional Advancement on the Technical Ladder"

Dr. F. C. Peterson
Director of Industrial Relations
Dow Chemical Company
Midland, Mich.
"Evaluating the Young Engineer"

IN EDUCATION

Moderator:
Anthony J. Del Mastro, Chairman
Engineers in Education Subcommittee

Panelists:

Professor R. E. Stiemke
Professor and Director
School of Civil Engineering
Georgia Institute of Technology
"Why Young Engineers Don't Want to Teach"

Dr. Clark A. Dunn
Executive Director
Division of Engineering Research and Professor of Civil Engineering
Oklahoma Institute of Technology
Oklahoma A. & M. College
"The Role of the Professional Society for the Young Engineering Teacher"

Dr. John C. Calhoun, Jr.
Dean of Engineering and Director of Engineering Exp. Station and Ext. Service
Agricultural and Mechanical College of Texas
"What Does Education Offer to the Young Engineer?"

IN GOVERNMENT

Moderator:
Leonard D. White, Chairman
Engineers in Government Subcommittee

Panelists:

D. H. McCoskey
Corps of Engineers
Dallas, Texas
"Role of the Federal Government"

R. L. Schmidt
Texas Highway Department
"Role of the State Government"

IN PRIVATE PRACTICE

Moderator:
Linas H. Brown, Chairman
Engineers in Employ of Private Practitioners

Panelists: (Employer Viewpoint)	(Employee Viewpoint)
C. D. Williams Patchen and Zimmerman Augusta, Ga.	Allan Curry of the firm of Max A. Mehlburger Little Rock, Ark.
Alex Van Praag, Jr. Warren & Van Praag, Inc. Decatur, Ill.	Tom Lowe, Jr. Michael Baker, Jr., Inc. Jackson, Miss.
Alfred J. Ryan Alfred J. Ryan & Associates Denver, Colo.	John A. McFee C. Warren Bogan & Associates Washington, D. C.

Panel will discuss the following topics from the Employer and Employee Viewpoint:
Professional Development Opportunities
Working Conditions
Economic Problems
Unionism

PROGRAM FOR LADIES

Wednesday, June 5, 1957	
2:00 p.m.— 4:00 p.m.	Hospitality Room Open
Thursday, June 6, 1957	
9:00 a.m.— 4:00 p.m.	Hospitality Room Open
9:30 a.m.—11:00 a.m.	Meeting Ladies Auxiliary
5:00 p.m.— 6:30 p.m.	Ride in air-conditioned buses to Ft. Worth
6:30 p.m.—Midnight	Ranch Style Party at Ridglea Country Club, Ft. Worth
Friday, June 7, 1957	
9:00 a.m.— 4:00 p.m.	Hospitality Room Open
10:00 a.m.—12:00 Noon	Brunch and Style Show in Neiman-Marcus' Zodiac Room
12:30 p.m.— 2:00 p.m.	Luncheon with Members
2:30 p.m.— 4:00 p.m.	Tea on 35th Floor of Republic National Bank Building
4:00 p.m.—	Evening Free
Saturday, June 8, 1957	
9:00 a.m.— 4:00 p.m.	Hospitality Room Open
10:00 a.m.—12:00 Noon	Sightseeing tour
12:30 p.m.— 2:00 p.m.	Luncheon with Members
6:00 p.m.— 7:00 p.m.	Reception and Cocktails at Engineers Club of Dallas
7:00 p.m.—Midnight	Annual Dinner and Dance

NSPE Group Discusses Policies

NSPE's Engineers in Industry Subcommittee met recently and decided to present a statement of policy to the Board of Directors at the annual meeting in Dallas regarding further Society activities to promote good employment relations between engineers and management. The Subcommittee will also present a plan to further professionalism among engineering students.

Members attending included Wayne Ault, chairman, Harry P. Cooper, R. F. Danner, D. F. Langenwalter, L. J. Larson, and E. H. Wickland. NSPE President-elect Garvin H. Dyer also attended as did John A. McFee of the Engineers in Employ of Private Practioners Subcommittee.

National Affairs Committee Meets

Internal and external NSPE policies were reviewed at a recent meeting of the National Affairs Committee. Various changes will be presented to the Board of Directors for approval at the Annual meeting in Dallas.

Public Conference Slated June 13-14

The first public conference of The Patent Trade-Mark and Copyright Foundation of The George Washington University will be held June 13-14 at the Shoreham Hotel, Washington, D. C.

Reports based on systematically planned and coordinated interdisciplinary empirical research projects of the Foundation will be presented and discussed. Representatives of commerce, industry, education, science, manufacturing, finance, and other various professions have been invited to attend.

MAY MEETINGS OF NOTE

Conference for Engineers and Architects—Annual Conference, May 3, Ohio State University, Columbus, Ohio.

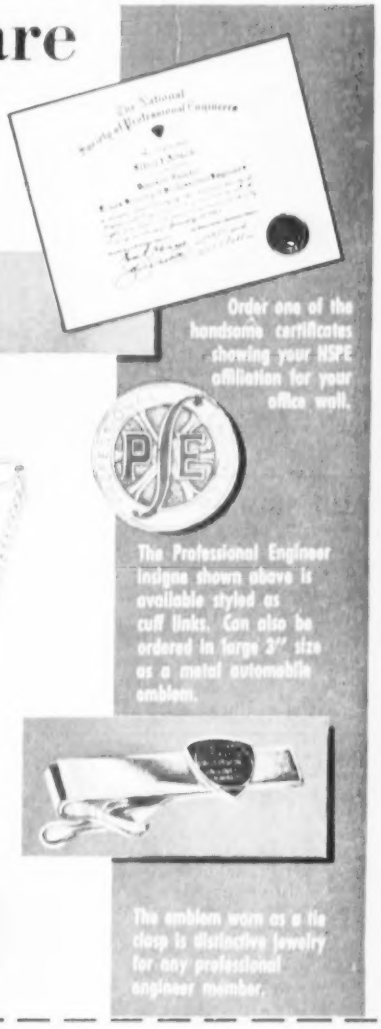
American Ceramic Society — Annual Meeting, May 5-9, Statler-Hilton Hotel, Dallas, Texas.

Society of Naval Architects and Marine Engineers — Spring Meeting, May 16-18, Lafayette Hotel, Long Beach, Calif.

Society of American Military Engineers — Annual Meeting, May 20-21, Washington, D. C.

American Society of Mechanical Engineers—Design Engineering Conference, May 20-23, The Coliseum, New York, N. Y.

certificates and emblems are available



The beautiful Society emblem is available in several styles. See coupon below.

Order one of the handsome certificates showing your NSPE affiliation for your office wall.

The Professional Engineer insignia shown above is available styled as cuff links. Can also be ordered in large 3" size as a metal automobile emblem.

The emblem mounted as a tie chain makes a perfect gift.

The emblem worn as a tie clasp is distinctive jewelry for any professional engineer member.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
2029 K Street, N. W., Washington 6, D. C.

I am enclosing my check in the amount of $ for which please send me
For Professional Engineers, P. E., and Junior Members, J. M.

J.M.	P.E.	
☐	☐	Certificate No. 1 with Chapter and State designation, priced at $1.50
☐	☐	Certificate No. 2 with State designation, priced at $1.50
☐	☐	American Engineer Binder, priced at $3.00
☐	☐	Emblem, mounted as a charm, priced at $5.00
☐	☐	Emblem, mounted as a pin, priced at $5.00
☐	☐	Miniature Emblem, mounted on lapel button (⅜"), priced at $2.50
	☐	Miniature Emblem, mounted on tie clip, priced at $2.50
	☐	Emblem, mounted on tie chain, priced at $2.50
	☐	Professional Engineer Emblem cuff links (set), priced at $3.00
	☐	Automobile Emblem (3"), priced at $1.00

PLEASE MAIL TO

ADDRESS REG. NO.

CITY ZONE STATE

I am a member of the Society of Professional Engineers.
State

(and if Certificate No. 1 is desired) Chapter

Charms and pins (exclusive of lapel buttons) engraved upon request

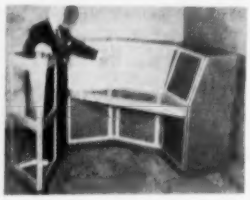
What's New

This column describes new products of general interest to professional engineers. For further information, circle the item number on opposite page and mail to the AMERICAN ENGINEER.

These listings are informational and are not an endorsement of the products, nor of the manufacturer's claims.

ENGINEER'S ERECTOR SET — Item 30

Development of a unique new wedge section now makes it possible to combine several cabinets or racks into a semi-circular unit so that an operator has finger-tip control of all instrumentation in the cabinets. The cabinets thus combined into a U-shaped group are adaptable to fit into the corner of a room or to meet a large variety of special layout requirements.

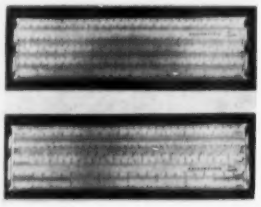


ALUMINUM GRATING — Item 31

An aluminum grating that meets the demands of the construction and maintenance industries for heavy and versatile usage has been announced by the Klemp Metal Grating Corp. The RR type aluminum grating is especially designed to retain the combined advantages of a rectangular opening and riveted gratings. This grating remains structurally rigid regardless of cutouts located in any part of the panel.

IMPROVED SCALEMASTERS — Item 32

New improved 12-inch Architects' and Engineers' Scalemasters have been introduced by The C-Thru Ruler Co. They have metal reinforcements on each end to give greater rigidity. Important features are: all scales exposed to full view; slotted openings for convenient use; squinting, searching or turning to find needed scale is eliminated.

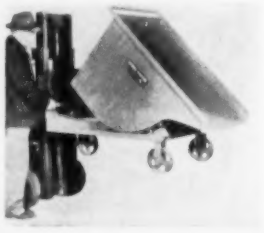


MACHINING STAINLESS STEELS — Item 33

A new pocket-size slide chart on machining stainless steels is now available from The Carpenter Steel Co. This handy chart measures 9¼" x 4¾", and contains the latest information on how to machine the popular grades of stainless. It gives concise data on turning, drilling, tapping, threading, milling and reaming operations. The chart tabulates speeds and feeds, and gives special notes on drilling, tapping, lubrication and welding.

SELF-DUMPING HOPPER — Item 34

A self-dumping hopper only 30 inches wide, designed for handling bulk materials, scrap and waste through narrow aisles and in confined areas, is now available. The hopper will pass through ordinary doors with ease, and has a capacity of ten cubic feet. Mounted on three casters, it can be pushed manually or transported by fork truck. A push bar at the top aids manual movement.



STUD HAMMER — Item 35

Industry's first piston-driven, power-actuated fastening tool. The safer and more economical fastening of wood or sheet metal to concrete is now possible because of the new tool. Firing a blank cartridge, it can drive a specially developed nail stud through wood objects or through sheet metal, firmly anchoring the object to concrete.

ILLUMINATED OILTIGHT PUSH BUTTON — Item 36

An illuminated oiltight push button, combining in one unit the functions of both a push button and an indicating light, has been announced by the General Electric Co. The new device makes possible a saving of approximately 50 per cent in panel control space. Easily fitted in the same hole and mounting space as existing oiltight units, the device can be panel-mounted or rack-mounted.

SCRIBER FOR ALL SURFACES — Item 37

Arch Crown Tags Inc. announces the "Perma-Scribe," a marking stylus with a newly-developed point that inscribes a permanent marking, writing or identification on most any kind of surface. The stylus point produces a flowing type of mark on metals of all degrees of hardness, plastics, wood surfaces, glass, rubber, linoleum.

TINY BPW RESISTOR — Item 38

A new precision wirewound resistor is now available to meet engineering demands for a reliable, yet inexpensive, product that will meet the electrical characteristics of encapsulated units. The type BPW resistor offers high stability with an average resistance change of less than 0.50 per cent when operated at full power dissipation at 25°C ambient for 1000 hours.

PEEPHOLE FOR ATOMIC PROCESSES — Item 39

A new type of glass shielding brick that is as dense as iron, and 2/3 as dense as lead, has been announced. Used as an insert in a metallic or concrete wall, the lead glass brick enables the worker to observe the action, perform remote manipulations, and even read instruments behind the wall shield.

American Engineer

Readers' Service Department

Here's How Busy Engineers Can Keep Up-to-Date . . .

Registered, professional engineers *are* busy people but their careers demand that they "stay on top" regarding new products and new developments. We hope that our new READERS' SERVICE DEPARTMENT will help our more than 42,000 readers do just that.

HOW WILL IT WORK?

It's easy. You will notice that each advertisement in this issue makes reference to a number used on the card below. If you want more information about any ad simply circle the corresponding number on the card and MAIL PROMPTLY! Read the ads in this issue NOW and then complete the card below and drop in the mail. The information you want will be on its way to you within a matter of days.

TODAY'S TECHNOLOGY MOVES FAST—KEEP INFORMED

AMERICAN ENGINEER
2029 K Street, N.W.
Washington 6, D. C.

MAY

Please have information sent to me on items circled below:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

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My Name ..... Title .....

Company Name .....

Address .....

City ..... Zone ..... State .....

alive today! *. . . like 400,000 other Americans cured of cancer who went to their doctors in time*

Let's give our doctors a chance. Thousands of Americans are being cured of cancer every year. But too many are losing their lives needlessly because they failed to consult their doctors when the disease was in its early . . . and therefore more curable . . . stage.

Form the life-saving habit of a head-to-toe physical checkup once a year. For men, this should include a chest x-ray; for women, a pelvic examination. Make it a habit . . . for *life.*

American Cancer Society®